Telephony.

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone and Sound Waves
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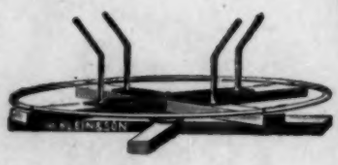

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COURTESY.

That courtesy is essential to those who desire advancement, must be accepted as a fact. It is essential not only in the transaction of ordinary business, as between employes and officials, but as a stock in trade in dealing with the public—of value not only to the ambitious employee, but to the company. Without it, men with other talents and qualifications seemingly sufficient, have failed; with it, those lacking in many other ways have been successful.

Other things being equal, the employe who is uniformly civil and courteous in his dealings with the public and with his fellow employes, is very likely to be given preference. It indicates a strength of character and a previous self-discipline that insures calm, judicial consideration of important matters in emergencies. "Losing one's head" is fatal to intelligent supervision. "Whom the gods would destroy, they first make mad."—Bulletin of Illinois Central Railroad.

What of Commission Control?

The clause in the majority of public utility laws now on the books of various states which provides that the public service commission must issue a certificate of "public necessity and convenience" before permitting the operations of a competing company has been looked at askance from the beginning by many telephone men. It is still regarded with suspicion and there is every reason why it should be. Interpreted and applied in certain ways, it is capable of putting an absolute stop to competition. Its possible benefits seem to many to be negligible when compared to its possible injurious effects.

But few rulings bearing on this phase of commission control of utilities have been made. That just handed down by the Michigan Railroad Commission, and which is reported elsewhere in this issue, is, therefore, of the utmost interest. This much, at least, may be said for the present case—the commission appears to have proceeded in a thorough and painstaking manner. It carefully considered all the conditions before coming to a conclusion, and its reasoning, in the light of the mandatory character of the statute, seems irreproachable.

History is rapidly making in the telephone business. New lights are being thrown on the industry from many sides. One of the most conspicuous is this of commission control. Will it be a success? Will it be able to protect the business from interests which are monopolistically inclined. Will it effectively safeguard the public? The manifold benefits of competitive telephone operation are known to everyone who knows anything of the business. Can these benefits, or any substantial part of them, be retained and enhanced by the commissions?

In short, the commissions are themselves on trial before the bar of the public—and the final verdict is still in doubt.

Considerations for Economy in Aerial Cable.

When a telephone company reaches the point where a cable system has to be installed, it is confronted with many questions which it has to answer before the construction is started. When cable was first used, a guess would be made as to the proper size to install. Sometimes the sizes used were so small that the cable was outgrown within a short time and an additional cable would have to be run or the old cable taken down and replaced with one of larger size.

Nothing was known about the method of distribution and cable systems were laid out in a manner which was not at all economical. With the increasing amount of cable installed, data became available so that studies could be made looking to the best economy in the planning of a cable system.

In the article on "The Economics of Aerial Telephone Cables Systems" by Gerald Deakin, published on other pages of this issue many of the points to be considered in laying out a system for the best economy are considered. A point which is of great interest is that regarding the

proper size of cable. In determining the size, many factors must be taken into consideration in order to obtain the greatest economy. These factors are fully discussed and by means of examples their use is explained. The question of cable terminals has bothered many telephone men. It is pointed out that for street leads, the annual cost of 400 feet of paired drop wire is equivalent to the annual cost of a 10-pair unprotected cable and that 450 feet and 500 feet of paired drop wire are equivalent to a 15-pair and a 20-pair terminal respectively. Therefore it is economical to install a terminal whenever drop wire of these lengths can be saved.

Other points in regard to cables for main line and party line distributing systems are brought out in Mr. Deakin's interesting paper.

If I Were Boss.

The principal action of a popular drama, a few years back, hinged on an audacious vagabond, unaware of the identity of his chance acquaintance, telling the king how much better he could rule if only given the opportunity, says a writer in the Mountain States Monitor. It may be rather forward of me to advance my views on the subject, not being a boss myself, but from the viewpoint of one who has been bossed by a variety of men, one trait has been manifested so frequently as to probably be a common evil.

The worst enemy to good organization, I should say comes from a lack of fellow interest in those lower in rank and the assumption of a dignity on the boss' part compatible only with his idea of his position. Why this should be, I could never quite understand. Those who officer their company have generally worked their way up from the ranks where they at one time may possibly have filled more menial positions than some on whom the weight of their authority falls.

The right to rule by "divine right" has long been proven a delusion; therefore the only reason why any one man is honestly singled out and placed in charge of others is because he has shown an aptitude for forwarding the company's interests. Now it is a well known fact that good organization is only possible when based on the mutual good will and co-operation of those composing it; therefore, in adopting a frigid exterior, the official is immediately defeating the purpose of his advancement.

How does it pan out? The work goes on in a routine fashion, the boss busy with the larger field has no time for details, and ideas for the betterment of the handling of these details are not forthcoming because they can only be advanced by those actually engaged in the work. And a doubt as to their reception, a feeling of a wide chasm between them and their superior, effectively dampens any desire on their part to improve the business of their respective departments.

It has been advanced that mingling with subordinates in a social and semi-official way is apt to breed familiarity which would prove both embarrassing and unwelcome under other circumstances, but this cannot be true as long as the right to "hire and fire" is vested in the official meeting those working for him. No one quarrels with his own bread and butter, and the mere fact that the man over him has the power to take away that bread and butter precludes any tendency on the employe's part to take advantage of a friendly attitude.

Life is but a fleeting affair, after all; a few years pass and some of those once in subordinate positions must be advanced while those once in authority step out. The laws of business are inexorable and demand an alertness and business sense, which, after a certain period become impaired as age claims us. Where, then, is the feeling of superiority?

It doesn't pay. Organization to be effective must be based on friendship and mutual respect.

An Opportunity for Publicity.

On October 4 there will be gathered in Chicago a considerable number of representatives of foreign Chambers of Commerce, who will spend three days here following the International Congress of Chambers of Commerce, at Boston. A special executive committee of representative Chicago business and professional men will welcome the visitors and will do the honors. Besides this there will be a general reception committee of more than 200 men and women of that city.

Chicago is practically the geographical center of the Independent telephone industry. It would seem fitting, therefore, that some steps be taken to impress upon these business men from abroad the quality and extent of the Independent telephone development of the United States, and show them what competition in the telephone business has accomplished.

TELEPHONY has no definite plan to propose. It merely offers this suggestion and asks for comment from the field. If anything of the kind is to be undertaken, it would naturally be worked out through the directors of the National Independent Telephone Association. But every man in the business is interested and we shall be glad to receive suggestions.

There is such a thing as paying so much attention to details that policies and principles are neglected.

A Suggestion as to Handling Complaints.

A courteous employe will not irritate a customer, unless the provocation is extreme. It may be that a customer is cross, ill-tempered, unreasonable or discourteous, but the clever employe, whether manager or clerk, will not let these things interfere with *his* being courteous and attentive to the customer's requests. Every time a patron makes a complaint there is likely to be some ground for his doing so. This ground may be sufficient to cause him to "go after" the company in a discourteous way by abusing its management or service. The employe must be keen to consider the customer's point of view in the matter and not place himself in error by combating the customer and giving him a *real* cause for complaint, but rather take care of his complaint in a courteous manner. It pays every one.

Refuses Certificate of "Convenience and Necessity"

Michigan Railroad Commission, After Investigation of Situation at Vermontville, Declines to Grant Newly Organized Company Right to Operate in Competition with Citizens, of Grand Rapids— Interesting Reasons for the Action

The Michigan Railroad Commission has just handed down a ruling which discusses very fully the clause in the public utility law requiring the issuance by the commission of a certificate of "public convenience and necessity" to new telephone companies before permitting them to operate.

The case was that of the Vermontville Farmers' Independent Telephone Co., which was recently formed for the purpose of building lines in and about Vermontville, Mich., to be operated in competition with the system of the Citizens Telephone Co., of Grand Rapids. The reason for the formation of the new company is said to have been an increase in the party line rate of the Citizens company from $12 to $15. The new company proposed to charge but $12 for party line service.

The opinion quotes the clause in the act bearing upon the requiring of a certificate from the commission, which reads as follows:

"Any person, copartnership or corporation desiring to obtain a franchise to construct a telephone system in any municipality in the state of Michigan shall apply to said Railroad Commission for a certificate of public convenience and necessity, and said commission may grant or withhold said certificate after a public hearing and investigation upon the merits of the application in the manner provided herein for the holding of public hearings and investigation on complaint, and no such person, copartnership or corporation shall be granted a franchise in any municipality in the state of Michigan to construct a telephone system until they have received a certificate of public convenience and necessity herein provided for."

After reviewing briefly the situation in Vermontville, the population, number of telephones in service, rates, etc., the opinion goes on:

"The position taken by the representatives of the new company and strongly urged by them in its behalf is that the desired certificate of public convenience and necessity is something which the company is entitled as a matter of common right, but the construction and operation of telephone properties is not a matter of common right. Like other corporations of a quasi-public character, it operates only by virtue of the privilege or franchise granted by the state, and the state, through its legislature and under the constitution imposes such restrictions and limitations as it sees fit. . . . Within constitutional limits it is unquestionably within the province of the legislature to provide such statutory pre-requisites to the granting of the privilege or franchise under which a telephone company acts as its wisdom may dictate.

"With the somewhat simple construction of telephone facilities in their earlier days and their equally limited use by the general public, but few regulations of a statutory character were found necessary, but with the modern development of the telephone, with pole lines, and in many instances two or more lines, bordering every street or highway, with instruments singly or in duplication in every place of pretentious business and in a large portion of the homes of the people, the need to operate in the first instance and for more efficient regulation when in operation has been made to appear."

Continuing, the commission comments upon the spread of the belief in the efficacy of commission control of utilities generally, and defining what it finds to be its duty in the matter, says:

"The purpose of the provision of the Michigan statute requiring the certificate of public convenience and necessity and the language of the section itself are so clear as to require no judicial interpretation to point the way to the law's proper administration. The general purpose of the provision can only be to prevent the needless duplication of telephone facilities; to prevent the financial loss and unsatisfactory service incident to the struggle of two or more companies within a territory that can supply no more than sufficient business for one.

"The degree of convenience and necessity which the commission must find to warrant the granting of its certificate can not rest simply in the desire of the applicants. It is a question which rests rather in sound reason and discretion and is largely determinable by the fact of whether a given community has or has not efficient telephone service.

"By the provisions of the law already quoted the commission 'may grant or withhold said certificate after a public hearing and investigation upon the merits of the application.' In matters of this character it thus clearly becomes the duty of the commission to consider the surrounding facts and circumstances and then with the aid of the knowledge gained from the practical experience with the telephone world, to grant or withhold the desired certificate just as it is thus made to appear that such action will result for or against the public interest.

"The function of the commission is not to grant or withhold the certificate as a matter of favor, but to ascertain the facts and then act with uniformity upon the facts disclosed. If the facts do not, in sound reason, warrant the granting of the certificate, the commission acts under as positive a prohibition as though controlled by the positive language of a statute.

"It should be likewise said that the range of facts to be ascertained by the commission is not such as to permit vague speculation by it to justify the granting of a certificate authorizing the construction of a telephone line as a question of possible convenience or withholding it upon the claim that it had not been shown to be a thing indispensable."

The alleged high rates of the Citizens company the commission finds to be insufficient as a reason for the establishment of a competing company, pointing out that redress may be obtained by the telephone users under the utilities act. This, if true, the commission says, would not ordinarily justify it in granting the certificate, and it quotes the appellate court of New York, which, in reviewing the decision of the Public Utilities Commission refusing the granting of a similar certificate for the building of a railroad, said:

"The local sentiment aroused by the alleged misuse or abuse of an existing franchise affords no sufficient reason for granting another franchise, upon the ground that public convenience and necessity require the construction of another road."

The commission then goes on to say that the opinion of the court in that case was based upon the fact that an adequate remedy might be had under the statute, and declares that the same condition exists under the Michigan statute. The opinion then continues as follows:

"The public to be considered in granting or withholding a certificate of convenience and necessity in the particular case is the whole public of Vermontville, the contiguous territory and all such as may be compelled to use the telephone facilities that the community affords wherever they reside; and that public is much more interested in good service and fair rates than in the question of who owns the facilities. The law having created a remedy for the correction of poor service and excessive and unreasonable rates, it is to be presumed that the power for such correction will be applied whenever it is invoked.

"But the commission has not seen fit to base its findings solely upon the fact that the law afforded an adequate remedy. It has desired rather to go into the merits of the controversy that has given rise to the desire to construct a second company at Vermontville and, as already stated, has caused a thorough investigation to be made both of the financial records of the Citizens company so far as they relate to the business transacted at that place

and of the history and value of the property employed. This we have done because the facts disclosed have an important bearing upon the results reasonably to be anticipated if the business at Vermontville is to be divided between two companies."

An analysis of the first and replacement costs of the Citizens plant then follows, as also of the company's gross and net earnings, estimates of depreciation, etc., showing that, at the company's present rates (which are complained of), it has been actually earning less than 1 per cent. per annum on its investment. Showing that the Citizens is now serving about one in every six of the population, and that it cannot reasonably expect any great increase in patronage for some time to come, the opinion concludes:

"The Vermontville Farmers' Independent Telephone Co. can unquestionably construct a plant for the territory served, as one unit, at a less total cost than even the reproduction value of the property as found by the commission, but the new company would divide rather than increase the revenue; it would greatly increase, if it did not double, the total operating and maintenance charge; it would duplicate facilities and limit the general telephone use and, in those cases where subscribers found it to their interest to install both instruments, it would entail practically a doubled burden of expense.

"In our judgment it can not be said that it would be a venture of either private profit or public convenience or necessity. The application will be denied and an order to that effect will be entered."

Constitutionality of Ohio Public Service Act Upheld

County Court First to Encounter Charge that Measure is Unconstitutional in that It Interferes with Vested Rights—Action Brought to Restrain Building of Lines which Would Parallel Existing Ones, Without Certificate from Commission

The constitutionality of the public service act, in Ohio, passed by the last general assembly, has just been upheld in a decision given by Judge Brodrick, in the common pleas court, of Logan county. This is the first time since the passage of the measure that judicial consideration has been given it.

The case was one involving the right of the Logan County Farmers Telephone Co. to build a line, which would parallel one belonging to the United Telephone Co., without first securing from the Public Utilities Commission a certificate of public necessity and convenience. The action was brought by the United company to restrain the Farmers' organization until the matter had been heard by the commission. The court's ruling sustains the United.

The defendant company, the Farmers, held that the public utilities act was unconstitutional in that it interfered with its vested rights as an Ohio corporation, operating before the passage of the new law. Regarding this point, the court said:

"Whatever rights the defendant company have are those granted by the charter of the state incorporating the company and granting to it the rights and powers of a telephone company, and whatever rights it may have are the same as apply to every other telephone company within this state, which was incorporated prior to May 31, 1911.

"The granting of a charter or franchise by the state to an incorporated company protects the company as to all acts performed under the charter, but as to all acts not performed the right still exists in the state to enact new laws regulating such companies.

"For instance, as to all lines constructed and plants or systems established by the defendant company under existing laws at the time of the granting of such charter, the company is fully protected by its charter, but as to all unexecuted matters by the company at the time of the passage of an act changing or amending the laws, and new enactments governing the same, the company must be governed by such later legislation.

"This question came before the Supreme Court of the United States in the case of Pearsall vs. Great Northern Railway Co., 161 U. S. 648-40 L. Ed. 838—in a case analagous to the one at bar. The first two points of the syllabus read as follows:

"'1. A grant of power to a corporation is to be strictly construed against it, and nothing will be presumed to pass by the grant unless it be expressed in clear and unambiguous language.

"'2. Statutes which operate only to regulate the manner in which the franchises of a corporation are to be exercised, and which do not interfere substantially with the enjoyment of the main object of the grant made by its charter, do not impair the contract contained therein.'

"In concluding the opinion in this case Mr. Justice Brown says: 'In conclusion, we hold that where, by a railway charter, a general power is given to consolidate with, purchase, lease, or acquire the stock of other roads, which has remained unexcuted, it is within the competency of the legislature to declare, by subsequent acts, that this power shall not extend to the purchase, lease, or consolidation with parallel or competing lines.'

"Applying the principles of this case to the case now under consideration, it will be apparent that in the enactment of the public utilities act no right granted by the charter to the defendant company was destroyed, or even affected. Under its charter it had the right to establish telephone systems or plants and to construct and equip telephone lines.

"Under the public utilities act it still has the right to establish telephone systems or plants and to construct and equip telephone lines, but the manner of such construction has been placed under the control of the Public Utilities Commission by the same power that made it possible for the defendant company to secure its charter in the first instance. The main object of the charter granted to the defendant company has in no sense been interfered with, but the method of carrying out this object as to all unexecuted contracts has been changed or rather new enactments have been made, and this is within the competency of the legislature. To hold otherwise would destroy the police powers of the state, and make the creatures of the state greater than their creator.

"I am, therefore, of opinion, that the public utilities act is not retroactive in its effects; that it does not impair the obligation of contracts; (and that it) is constitutional."

The Farmers company claimed that the right granted by its charter and amended charter had been exercised in the locality where it proposes to make the extension complained of, and that, therefore, it did not come within the spirit and meaning of the act, which provides as follows:

"No telephone company shall exercise any permit, right, license or franchise that may hereafter be granted but not actually exercised or that may hereafter be granted to own or operate a plant for the furnishing of any telephone service, thereunder in any municipality or locality, where there is in operation a telephone company furnishing adequate service, unless such telephone company first secures from the commission a certificate after public hearing of all parties interested that the exercising of such license, permit, right or franchise is proper and necessary for the public convenience."

Regarding this contention, Judge Broderick defined the meaning of the law as follows:

"The evident purpose and meaning of the law is, that where a telephone company has exercised a right or franchise granted to it in a certain locality prior to the passage of the act in question, by erecting a telephone line

(*Continued on page* 354.)

The Economics of Aerial Telephone Exchange Cable Plant

A Discussion of the Various Factors Considered in the Layout and Installation of a Cable System, for the Most Economical Arrangement—The Proper Kind of Working Plan—Methods for the Determination of Cable Sizes

By Gerald Deakin

The most economical arrangement of a telephone exchange cable plant, or in fact, any plant, is reached when the aggregate annual costs for a certain period of years, sometimes called the period of greatest return, is reduced to a minimum. Just what constitutes the proper period of years, for which construction should be planned, is both an engineering and a financial problem. The terms engineering and financial are here used in a somewhat restricted sense, to bring out the necessity of considering problems of this nature from all angles. From an engineering viewpoint, not hampered by financial restrictions, this period should be sufficient to cover the average useful life of the principal portions of the cable plant; that is, the arrangement of the cable plant should be such as to give the minimum aggregate annual costs up to the time when radical alterations or replacements must be made.

Cases do arise, however, where the engineering viewpoint must be modified to meet the financial viewpoint, the tendency of which is nearly always to reduce the period of years for which construction should be planned. For example, the average life of the principal portions of the cable plant may be fifteen years but the franchise expires in ten years. Scarcity of money and other financial obstructions may also tend to reduce or alter the period of greatest return. What I wish to point out here is that maximum economy obtains only when this period agrees with the useful life of the plant.

What is herein termed the useful life of the cable plant, is one based upon the average natural life of the component parts and a consideration of the probable future changes in the requirements of the territory served or to be served and those made necessary by improvements in materials and construction methods. All are important items and the one requiring the shortest period of years is the controlling factor in determining the useful life of the plant as a whole.

Determining Future Requirements.

The average natural life of underground cable is generally considered to be from 25 to 35 years and of aerial cable 15 to 20 years. While improvements and new developments in central office apparatus and systems are taking place continually, there seems little to indicate that the present underground and aerial cable construction methods will be substantially changed for some time to come. Therefore, the relative importance of these factors, based upon past experience, can be determined with comparative ease. When, however, we attempt to determine the probable future requirements of a territory for telephone service, we encounter at once a very indefinite problem and one depending not only upon the probable future growth and prosperity of the town, city or district, but also upon the probable future character of the social and industrial life in which the telephone is now or ultimately will be, a necessity. The probability of competition, municipal and otherwise, must also be considered.

Unknown as the future is, experience has shown that by giving due consideration and weight to all these points, predictions as to the future requirements for telephone service 10 to 15 years hence can be made, with a sufficient degree of accuracy to warrant results thus obtained to be used in the preparation of a general plan whereby all work done from time to time, as the city or town grows, may form part of a harmonious whole at some future time. At the present time, where conditions do not obviously warrant other assumptions, 15 years is generally taken as the ultimate period for which the greatest return should be planned. This period agrees reasonably well with the natural life of the aerial cable and central office plants.

Having decided upon the period of greatest return, the next step is to estimate, making use of all available and reliable data, the number and distribution of stations to be expected at different times during this period. Estimates for two and five year periods and for the ultimate period will generally be found sufficient. It is needless to say that the economy of a well laid out cable plant is almost solely dependent upon the accuracy with which these estimates are made.

Economical Arrangement of Exchange Area.

The most economical arrangement of the exchange area may now be determined. That is, should the exchange area be served by one or more than one central office? In determining this point, the type of central office equipment must be taken into consideration, also the size and gage of trunk cables. At the present time it seems safe to say that the automatic system will permit the establishment of many small branch or sub-offices, which could not be economically operated on a manual basis. The most economical arrangement of an exchange area is one in which all parts are in cost equilibrium. That is, any attempt to reduce the annual cost of one portion of the plant will result in a corresponding or greater increase in the annual cost of some other portion of the plant. A detailed description of the extensive work involved in making these "development" or "cable" studies, as they are called, does not come within the scope of this article. It is briefly mentioned to call attention to the fact that such studies should be made in every case where any appreciable amount of work is to be done and by engineers competent to make such studies.

The distribution of stations and general arrangement of the exchange area, including the location or locations of the central office or offices, as the case may be, being known, the extent of the initial underground system may be taken up and determined. The underground system must, of course, conform to the requirements of any ordinance affecting it.

Where restrictions do not exist, the underground system should be extended only as far as it is economical to do so. Generally speaking, it may be said that the annual cost of 400 pairs of wires suspended aerially is approximately the same as the annual cost of a similar number of pairs of wires placed underground. Therefore, where conditions do not warrant other assumptions, conduit should be extended to include all cable of 400 pairs of wires or more, providing that the ultimate num-

ber of pairs required exceeds 600. In cases where a street is unpaved but is to be paved in the near future, it is often advisable to take advantage of the saving made possible by the absence of a pavement and extend the conduit system beyond the point arrived at, after the manner suggested.

The aerial plant may now be considered in detail. To begin with let us consider a typical pole or working plan, and a typical cable plan.

In the pole plan diagram, Fig. 1, are shown two main pole leads, one as an extension of the underground system. Both leads for the most part are arranged to serve the blocks on either side. A city laid out in this manner would have a main lead on each alternate street, passing the short end of the blocks. In settled areas, particularly if block feeding is or will be required, or if provision is to be made for conduit at some future period, this or a similar arrangement will generally give the most satisfactory results. It permits the planning of distributing facilities for a considerable period of years hence, and concentrates the subscription from the blocks on either side into one main cable which may be relieved from time to time, as occasion requires.

Long distributing leads are often advisable in thinly settled districts, where otherwise a main lead on each alternate street, as previously mentioned, would entail the expense of carrying many main leads through non-productive territory. A long distributing lead is shown on *G* street, in Fig. 1. A main distributing pole lead passing the short end of the blocks should not be confused with the main conduit lead which generally passes the long side of the blocks. For example, in a large city, the main distributing leads shown on 2nd and 4th avenues would ultimately terminate in a main conduit lead running at right angles to them. By placing the main pole leads as shown, it is often possible to eliminate distributing terminals from the main cables and place them on the distributing cables exclusively. Where alleys exist, they should always be taken advantage of to eliminate street pole lines as far as possible. Furthermore, when the alley system is continuous, it is often advisable to plan long distributing leads of from three to eight blocks and in this way reduce the number of main leads required on the cross streets.

In first-class residential districts where alleys do not

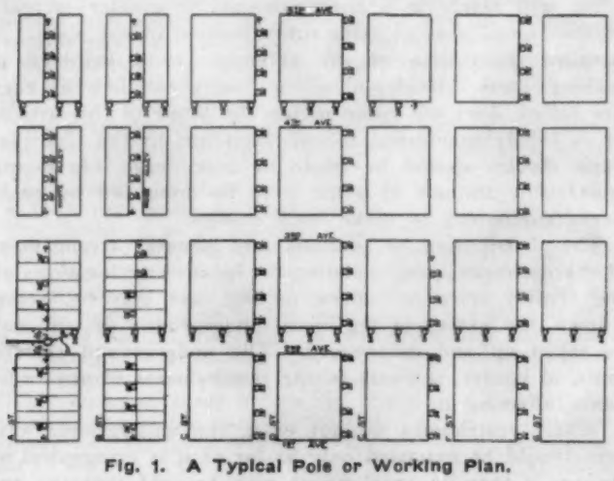


Fig. 1. A Typical Pole or Working Plan.

exist, block feeding is generally required. Where possible, a cable should be carried aerially down the center of each block on short poles, and connected to the main lead, either by an underground lateral or by an aerial span. This last method is generally possible where houses do not face the street on which the main lead is located. Examples of both kinds of block distribution are shown in Fig. 1.

Poles are costly and their life is comparatively short. Furthermore, the cost of a pole increases very rapidly with its size, likewise the cost of hauling, setting, shaving and trimming of poles is much greater for the larger sizes than for the smaller sizes. A light gang of say a foreman and three linemen, can economically set 30 and 35 foot poles, whereas a heavy gang or a derrick wagon is required to set the larger poles. Therefore, from the viewpoint of economy, it is desirable to use as short poles as local conditions will permit.

Size of cable in pairs	First cost per ft.	Size of cable in pairs	First cost per ft.
10	.14	75	.28
15	.15	100	.34
20	.16	150	.47
25	.17	200	.63
35	.19	300	.80
50	.22	400	.98
60	.245		

Table No. 1. First Cost of No. 22 B. & S. Cable in Position.

A working plan need not necessarily entail much expense in preparation. Suitable maps can nearly always be obtained and where a drafting department can not be afforded the proposed construction can be indicated on the map in pencil. A working plan should show, so far as aerial construction is concerned, the following:

a. The location and height of each pole or stub.

b. The location and size of each anchor rod.

c. The location and size of each lateral, it being understood that iron pipe is referred to unless otherwise specified.

It is generally not necessary to specify on city working plans, the top or butt diameter of poles, except in very special cases, providing the matter is properly taken care of in the construction specifications, and in buying. It may be assumed that the heavier poles will be reserved for the main leads, particularly the terminal poles and the lighter poles for the distributing leads.

Much time has been spent in an effort to determine the most economical gage of cable for the general distribution of subscriber lines. While the results obtained in different localities and under different conditions very considerably, it is now almost universally conceded that cable containing conductors of No. 22 B. & S. gage is best suited to economically meet the conditions generally encountered. The permissible length of cable in a subscriber's loop, however, varies with the character of the exchange, and, if of the central energy type, also with the character of the transmission circuit. In the central energy transmission system of the Bell companies, in which a repeating coil is used, the loss of current at the transmitter is much more noticeable than in the high resistance retardation coil systems universally used by the Independent companies. For this reason, for a given transmitter loss a longer length of loop is permissible with the latter type of circuit. As a general rule, it may be said for this type of circuit, that No. 22 B. & S. gage cable for subscribers' loops is permissible up to approximately two miles in multi-office exchanges and up to four miles in single office exchanges. It must be always borne in mind, however, that these figures may vary considerably with the character of the exchange, particularly where long haul trunking or long distance business is important.

In all cases, the length and character of the subscriber's line must be such as not to reduce the quality of transmission below the accepted standard. Where the lengths of subscribers' loops exceeds the figures given above, larger

gage cable or open wire must be resorted to. On the other hand, where the length of the subscriber's loop is very short, such as is often the case in large cities, a smaller gage cable may be economically used.

A discussion of all the factors entering into transmission problems cannot be considered here. However, the relative transmission efficiency of paper insulated cables, for all practicable purposes, varies inversely as the square root of the product of the mutual electrostatic capacity and the loop resistance. For this reason, little is to be gained by doubling up cable pairs, for by so doing the capacity of the circuit is doubled while the resistance is cut in half, the square root of the product remaining the same. What little advantage that is gained is in the central loops. This is due to the fact that the transmitter is supplied with a greater volume of current, which, with the transmission circuit used by the Independent telephone companies, is not a particularly important point, within the limits previously given.

The completed pole or working plan, as it is sometimes called, shows the general method of distribution. The cable plan may best be prepared from the finished working plan and should show the location and size of all cables and the size, location and character of all terminals. Also the cut-out and number of each cable and terminal and the gage of all cable other than No. 22 B. & S.

Many factors must be considered in determining the proper size of cable. From the standpoint of economy, the size of cable placed should be such that no reduction in the aggregate annual cost for the period of greatest return, can be had either by increasing or decreasing the size of the cable. The annual costs must include the average interest, taxes, maintenance and depreciation, with due allowance for the junk value of the cable at the end of its useful life, or the period of greatest return, in case the two do not agree. The total value of these items for aerial cable, is generally taken as equivalent to 14.5 per cent. of the first cost of the cable in position.

In addition to these charges, the aggregate annual cost for a period of years must take into consideration the cost of "cutting in" the new cables, that is, the cost of splicing and the transferring of subscribers. Where the cable involved is short, the cost of this part of the relief work, often forms the greater part of the expenditure, thus making it inadvisable to plan cable so as to require frequent relief. On the other hand, where the cable involved is long, the cost of relief may be negligible, thus permitting the cable to be relieved with economy at frequent intervals. For the same reason, small cables can be economically relieved less frequently than large cables.

In comparing annual costs for different periods, we must always reduce them to their present worth, in order that such costs may be placed on a comparable basis. The present worth of an annual charge of $1, deferred for five years is that amount which, if placed at 6 per cent. compound interest would equal $1 at the end of five years, and in this case is approximately 75 cents. The present worth of a similar annual charge for any period up to 15 years, is given in Table No. 2. More complete tables for other periods may be found in most engineers' handbooks.

Present Worth Factors		Cost of Relief	
Years deferred	Factor	Size of relieved cable in pairs	Cost in dollars
0	1.00	10	12.80
1	.94	15	15.50
2	.89	20	17.00
3	.84	25	20.00
4	.79	35	25.00
5	.75	50	30.00
6	.71	60	33.00
7	.67	75	39.00
8	.63	100	50.00
9	.59	150	70.00
10	.56	200	88.50
11	.53	300	128.00
12	.49	400	168.00
13	.47		
14	.44		
15	.42		

Table No. 2. Present Worth Factors and Cost of Relief.

In Table No. 1 will be found the first cost of No. 22 B. & S. gage cable in position, including strand and splicing on the basis of one splice in each 500 feet of cable. These costs are based upon the average prices of labor and material and for comparative purposes, may be considered as substantially correct, even though the actual costs, in a particular locality may vary somewhat with the conditions to be met.

The total cost of relieving a cable, apart from the cost of suspending the new cable, involves at least two tag splices, the transferring of a certain number of drop and service wires, the re-running of a certain number of jumpers on the main distributing frame at the central office and the changing of the clerical and engineering records. Providing the associated distributing cables and terminals were brought out or multipled in an intelligent

Aggregate present worth Factor	Years deferred	Size of Cable in Pairs. 10	15	20	25	35	50	60	75	100	150	200	300	400
		Present Worth of Annual Cost in Cents Per Foot												
1.00	0	2.03	2.18	2.32	2.47	2.76	3.19	3.56	4.07	4.93	6.82	9.13	11.60	14.20
.94	1	1.91	2.02	2.18	2.32	2.59	3.00	3.34	3.82	4.64	6.41	8.58	10.90	13.35
1.83	2	3.72	3.98	4.25	4.52	5.05	5.84	6.52	7.46	9.04	12.47	16.70	21.20	26.00
2.67	3	5.42	5.82	6.20	6.60	7.37	8.53	9.51	10.87	13.17	18.20	24.35	31.00	37.90
3.47	4	7.05	7.55	8.06	8.57	9.58	11.08	12.35	14.12	17.10	23.62	31.68	40.25	49.30
4.21	5	8.53	9.15	9.78	10.39	11 62	13.43	14.98	17.12	20.75	28.70	38.41	48.80	59.80
4.91	6	9.97	10.70	11.39	12.12	13.54	15.64	17.46	19.95	24.20	33.40	44.80	56.90	69.70
5.58	7	11.33	12.18	12.95	13.78	15.40	17.80	19.85	22.70	27.50	38.07	50.90	64.70	79.30
6.21	8	12.60	13.50	14.40	15.32	17.12	19.80	22.10	25.22	30.60	42.30	56.65	72.00	88.20
6.80	9	13.80	14.80	15.77	16.79	18.77	21.64	24.20	27.65	33.50	46.30	62.10	78.00	97.50
7.36	10	14.95	16.02	17.10	18.20	20.35	23.50	26.20	29.98	36.30	50.25	67.25	85.37	104.65
7.89	11	16.00	17.20	18.30	19.49	21.78	25.18	28.06	32.09	38.94	53.80	72.00	91.60	112.00
8.38	12	17.00	18.30	19.43	20.70	23.15	26.75	29.88	34.10	41.30	57.15	76.50	97.20	119.00
8.85	13	17.95	19.30	20.56	21.82	24.40	28.20	31.45	36.00	43.65	60.35	80.75	102.50	125.60
9.30	14	18.88	20.28	21.55	22.95	25.65	29.64	33.10	37.80	45.80	63.40	85.00	107.90	132.00
9.71	15	19.70	21.08	22.52	24.00	26.80	31.00	34.55	39.45	47.95	66.20	88.70	112.60	137.80

Table No. 3. Present Worths of Aggregate Annual Costs of No. 22 B. & S. Cable for Periods of One to Fifteen Years.

manner, no substantial change in these, so far as comparative costs are concerned, may be considered as being necessary in a general rule. Such changes as may be necessary may be considered as being offset by similar changes which, undoubtedly, would have been made to care for the changes in distribution even though a larger cable has been placed to start with.

In table No. 2 is also given the average cost of relieving a cable under normal conditions when approximately 80 per cent. full. These costs include the making of two branch splices on a working cable, the re-running of 50 per cent. of the jumpers connected to working pairs and 10 per cent. of the drop or service wires connected to working pairs; also the cost of the waste wire involved in re-running jumper and drop wires and the cost of preparing new plans and the changing of existing cable plans and other records.

The present worths of the aggregate annual costs of No. 22 B. & S. gage cables for periods of one to fifteen years, are given in Table No. 3. In the first vertical column is given the aggregate present worth factor which for a given period of years represents the summation of all present worth factors up to that particular year. For example, the factor for the fifth year is the summation of the individual factors for the first five years, which individual factors are given in Table No. 2. In the horizontal row opposite zero deferred years, are given the annual costs of the various sizes of aerial cable, which, as before stated, are equal to 14.5 per cent. of the first cost of the cable in position, as given in Table No. 1.

In the second horizontal row of Table No. 3 are given present worths of the annual costs deferred for one year. They are equal to the annual costs given in the first horizontal row, multiplied by the present worth factor, given in the first vertical column for one year deferred. In the third horizontal row are given the aggregate present worths of the annual costs deferred for two years which are the summation of the present worths of the annual costs for the first and second years. They are obtained by multiplying the annual costs in the first horizontal row by the aggregate present worth factor for two years deferred. In the 16th row are given the aggregate present worths of the annual costs deferred for 15 years.

The object of this table is to provide a ready means for determining the relative economy of any combination of cables. For the purpose of illustration, assume a 50-pair cable will be required in ten years and that the growth in stations will be uniform from zero at the present time, to 50 in ten years hence. It is desired to determine whether a 50-pair cable placed now is more economical than a 25-pair cable supplemented at the end of five years by a second 25-pair cable. For the sake of clearness, the miscellaneous costs of relief will be omitted. From table No. 3 it will be seen that the present worth of the aggregate annual costs of a 50-pair cable for ten years is 23.5 cents per foot. The present worth of the aggregate annual costs of a 25-pair cable for ten years is 18.2 cents per foot and of a second 25-pair cable from the fifth to the tenth years, 7.81 cents, a total of 26.01 cents per foot, or slightly more than the cost of a single 50-pair cable.

Strange as it may seem at first thought, it is in this particular case, more economical, considering ten years to be the period of greatest return, to place a 50-pair cable to start with, than to place a 25-pair cable and supplement it later on with another 25-pair cable. Had the growth of subscribers been such that the first 25-pair cable would have sufficed for eight years instead of five, the result would have been as follows: The cost of the 50-pair cable would have been the same, namely 23.5 cents per foot. The aggregate cost of the two 25-pair cables, however, would have been but 21.08 cents per foot, thus affording a saving during the ten years of 2.42 cents per foot in favor of the two cable scheme. As previously stated, no provision is here made for the cost of relief.

Consider one more example. A 200-pair cable will be required in ten years and a 100-pair cable in five years.

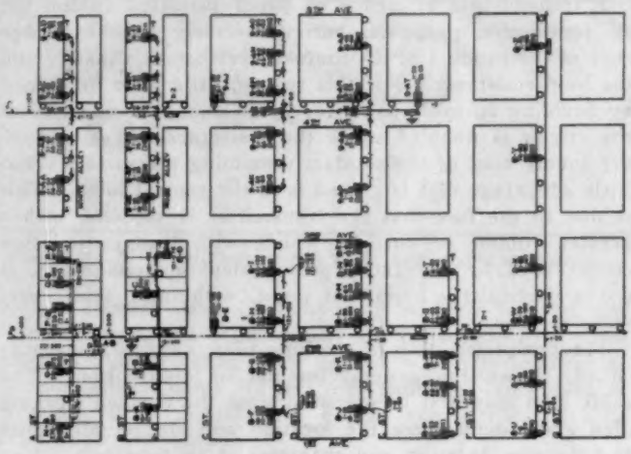


Fig. 2. A Typical Cable Plan.

The present worth of the aggregate annual cost of the 200-pair cable is 67.25 cents per foot and that of the two 100-pair cables 51.85 cents per foot, a saving in ten years of 15.4 cents per foot in favor of the two cable scheme. Considering the total cost of relief, the final result is obtained. In Table No. 2 it is found that the cost of relieving a 100-pair cable under normal conditions, is $50. Assuming that the cable is 1,000 feet in length, the cost of relief per foot of the cable involved would be five cents. Since the relief of the first cable is deferred five years, the present worth of the cost is equal to the above figure, multiplied by the deferred factor for the fifth year, as given in Table No. 2. In this case it is .75, thus making the present worth of the cost of relief 3.75 cents per foot, which added to the two cable scheme, makes the total cost of this scheme, 55.60 cents per foot, and results in a net saving of 11.65 cents per foot, over the single cable scheme. Had the cable to be relieved been but 100 feet long instead of 1,000 feet, it will be seen that the cost of relief would be increased from 3.75 cents per foot to 37.5 cents per foot. thus making the total cost of the two cable scheme 89.35 cents per foot, which is 22.10 cents per foor in excess of the single cable scheme. In a similar manner, any other combination of two or more cables can be compared.

From the foregoing examples, it will be understood that the economy of the cable system depends on a great many factors, all of which make the use of any simple set of hard and fixed rules impossible. It will be seen that under certain conditions, a large cable is more economical than two small cables. By changing one of the conditions, the others remaining the same, the reverse may be true. About all that can be specifically said, is that small or short cables should be planned for longer periods than large or long cables.

It will be surmised that short distributing and lateral cables of the ordinary size should be planned for a considerable period of years, often the ultimate period. For this reason one of the best ways to start the cable plan, is to locate the distributing terminals, as indicated by the development or cable study and then place such distributing cable as may be required to properly connect them, with such modifications as other considerations may require.

On street pole leads, the use of 10, 15 and 20-pair ter-

minals is recommended, except where, with a terminal on each pole, a terminal of greater size is required. Ten-pair terminals should be used only in localities where distribution is light. Terminals should be of such size and so distributed and located as to permit the bringing out of all cable pairs in the most economical manner. Obviously, unavoidable irregularities in distribution and inaccuracies in estimates will not permit of an efficient use of a main cable if the pairs are brought out but once. As a general rule it may be said that construction should be so planned that in the ultimate, all pairs should appear at least twice in different terminals, providing main lines only are to be arranged for, otherwise a reappearance of at least three times, in closely adjacent terminals is necessary to properly accommodate party lines. In cable plan, Fig. 2, 15-pair terminals for the most part have been made use of in connection with the main lead shown on Second Avenue. Twenty-pair terminals are shown on the Fourth Avenut lead. Where terminals are placed on private property, they should, except in special cases, be of sufficient size to care for the ultimate subscription which may reasonably be expected. Terminals at the end of the distributing cable,

Fig. 3. Conventions Used on Working and Cable Plans.

should be the same size as the cable. There is little economy in placing, for example, a 10-pair terminal on the end of a 15-pair cable.

In determining the number of terminals required on street leads, it may be assumed that the annual cost of 400 feet of paired drop wire, is equivalent to the annual cost of a 10-pair unprotected terminal and that 450 and 500 feet of paired drop wire are equivalent to a 15 and a 20-pair terminal, respectively. Upon these assumptions it follows that it is economical to install a terminal when-

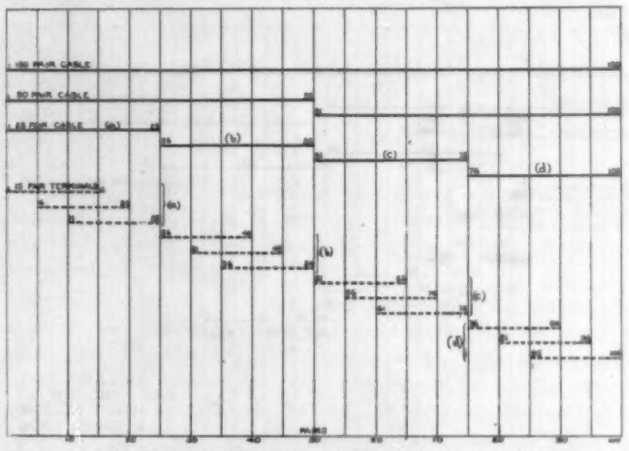


Fig. 4. Multipling of 100, 50 and 25-Pair Cable and 15-Pair Terminals for Individual Lines.

ever drop wire to the amount above specified can be saved.

Anyone who has had much to do with a large cable plant will appreciate, if he has not already done so, the advantages of adopting for general use, some connected series or system of cable sizes up to at least 100 pairs. In exchanges arranged for main lines exclusively, overlapping or multipling of the smaller cables is not as important or necessary as in those exchanges arranged for both main and party lines. Generally speaking, where main lines only are to be provided for, a system of 15, 25, 50 and 100-pair cables, with 15-pair terminals for distribution, will give good results. Where party lines must also be handled a system consisting of 15, 30, 50 and 100-pair cables will give better results. In this system, two 30-pair cables overlap in each 50-pair cable. Where doubt exists as to the accuracy with which the cable plant is or can be laid out, a system consisting of 20, 35, 60 and 100-pair cables with 20-pair terminals is often used. In this system, two 60-pair cables overlap in each 100-pair cable, two 35-pair in each 60-pair cable and two 20-pair in each 35-pair cable.

In Figs. 4, 5, 6, 7 and 8 are given a few methods of multipling 15 and 20-pair terminals, in connection with the various combinations of cables. In Fig. 4 is shown a system of 25, 50 and 100-pair cables and 15-pair terminals, arranged for main line service exclusively. In this system, three 15-pair terminals are brought out of each 25-pair cable, thus causing 5 pairs to appear three times, 10 pairs twice and 10 pairs once, an average of 1.8. In Fig. 5 is shown a system of 30, 50 and 100-pair cables and 15-pair terminals, arranged for mixed lines. In this system four 15-pair terminals are brought out of each 30-pair cable. In each 25 pairs, 10 pairs appear three times and 15 pairs two times, making the average appearance of each pair 2.4. To increase the flexibility of the system and to cause adjacent terminals to bring out more uniformly the different pairs, the multipling of the pairs at each terminal is split. The unit in this system is 50 pairs instead of 25. That is, the overlapping of terminals and cables extends to but does not exceed 50 pairs. A system of this nature can be made to give very good results, in exchanges where the party line service consists of two and four-party lines and is supplemented with a reasonable amount of main line service.

Where the party lines consist largely of four or more

parties, the number of terminals must be increased, particularly in localities where a line cannot be filled from closely adjacent dwellings or houses. A system similar to one just described is shown in Fig. 6. Here the 30-pair cables are replaced by 25-pair cables. This system

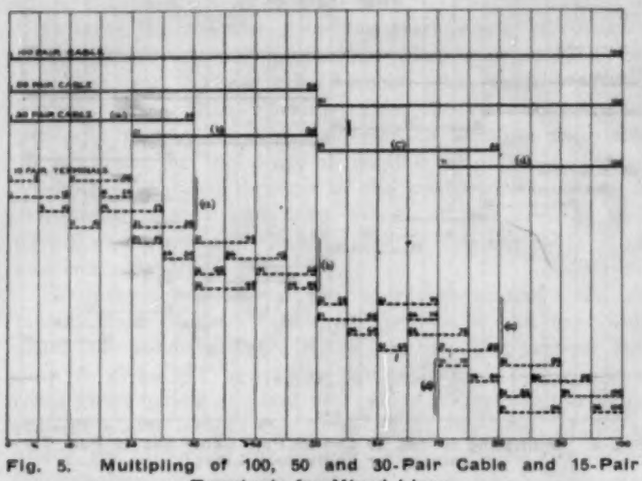


Fig. 5. Multipling of 100, 50 and 30-Pair Cable and 15-Pair Terminals for Mixed Lines.

is often used where blocks are short and the subscription reasonably uniform, additional terminals being placed as required on the main lead passing the short end of the blocks.

A system of cables and terminals which has been much used is shown in Fig. 7. Here 35, 60 and 100-pair cables are used in connection with 20-pair terminals. The overlapping in this case is continued so as to make 100 pairs the unit. The 20-pair terminals shown in this diagram are arranged for main line service, the pairs being brought out on an average of but 1.6 times. In Fig. 6 is shown a similar system of cables and terminals arranged for party line service. Here the pairs are brought out on an average of 2.4 times.

Methods of multipling such as just described are of much value, and help in laying out a cabling plan, in fact, a plan should not be started until the general method of multipling has been decided upon. The actual multipling of cables and

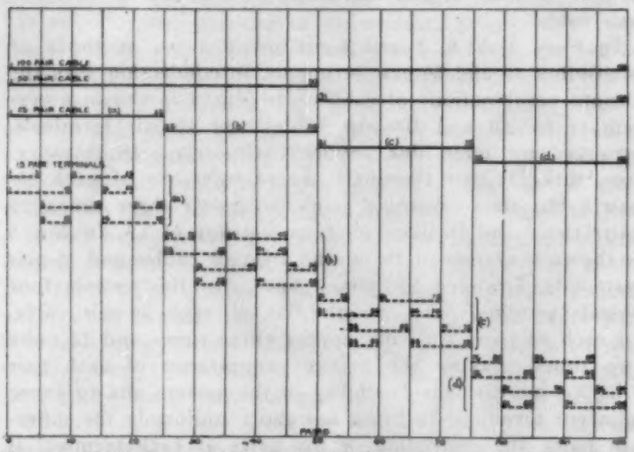


Fig. 6. Multipling of 100, 50 and 25-Pair Cable and 15-Pair Terminals for Mixed Lines.

terminals, however, must always be such as to meet the requirements of the district served.

In Fig. 2 the short distributing leads connecting with the main lead on 2nd Avenue, are connected for the most part, in accordance with the method of multipling shown in Fig. 5, terminals being omitted where not required. This particular cable plan is purely imaginary, but its equivalent is often found in actual practice. Distributing cables should always be connected to the main cable in such a manner as to bring out all pairs in the main cable in rotation and in order and in as short a distance as possible, for by so doing, suitable points of relief are automatically provided for. It may be assumed in this case, that all pairs of the first 100 pairs in the main cable have been brought out beyond F street. Point X-1, at the junction of F street and 2nd Avenue, is therefore a suitable point to relieve the cable when occasion requires. The cable may be cut at this point and the outer end connected to the relief cable, with the result that no changes in the distributing cables and terminals are required to bring out all pairs at least once in both the relief and relieved cables. Changes in the multipling of the distributing cables and terminals may be necessary to meet a non-uniform growth in subscription, but a close adherence to this rule will generally reduce such work to a minimum.

The process of bringing out all pairs in the main cable should be repeated as many times as necessary. When a main cable is thus multipled a number of times, the terminals and distributing cables should be so connected as to bring out all pairs as uniformly as possible, due allowance being made for the future when the main cable is relieved. In multipling distributing cables and terminals, always start from the outer end of the cable and work toward the

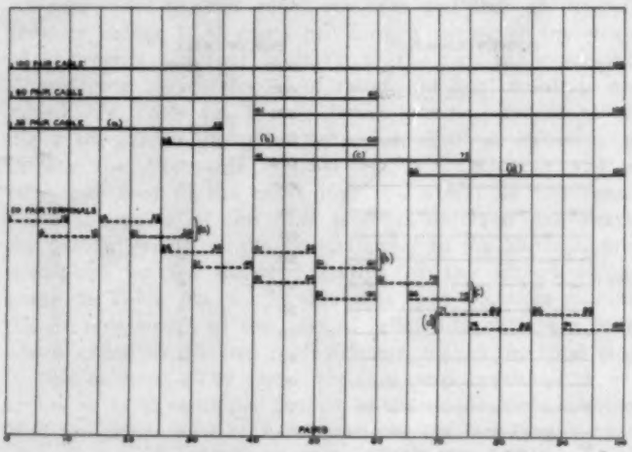


Fig. 7. Multipling of 100, 60 and 35-Pair Cable and 20-Pair Terminals for Mixed Lines.

underground or central office end, as the case may be. On 4th Avenue, the main lead is associated with the system of distributing cables and terminals shown in Fig. 8. A relief point is shown at X-2 at 4th Avenue and Rose Alley, in Fig. 2.

Cable plans, except for detail block work, may be satisfactorily drawn on a scale of 300 feet to an inch. Where extensive block work is required, a scale of 100 feet to an inch is recommended. The multipling of pairs connected or involved, should be clearly printed on the plan opposite each terminal and at the junction of main and branch cables or where a cable tapers or changes in size. The number and size of each terminal should also be clearly specified.

Always change the size of cable at a point of intersection or at a terminal or a terminal tap, so as to avoid unnecessary splicing. The efficiency of any system of multipling so far as the main cables are concerned, can always be greatly increased by "backing up" a number of small terminals by a larger terminal located in an apartment house, hotel or other building requiring many wires. For example, the 100 or 200 pairs of wires serving a distributing system such as shown in Fig. 2 might be brought out in one large terminal requiring 25 to 50 wires.

Those pairs which could not be readily assigned in the exterior distributing system, could then be used in the large terminal.

A cable plan containing complete and specific information is of great help in planning future construction and

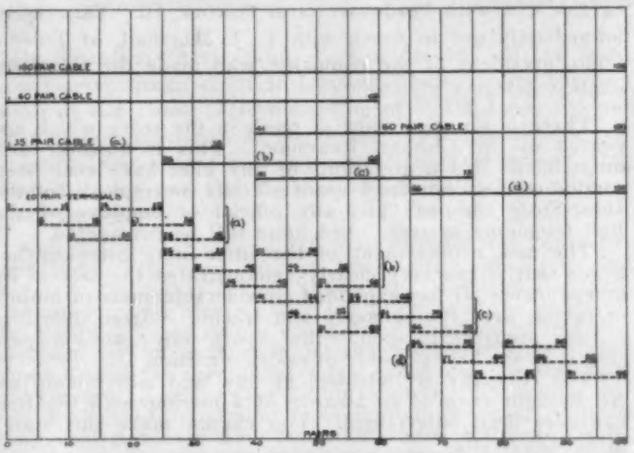


Fig. 8. Multipling of 100, 60 and 35-Pair Cable and 20-Pair Terminals for Mixed Lines.

to the assignment clerk. For thickly settled districts, it is recommended that a light line be drawn between adjacent terminals, on each side of which may be printed the number of the last house when each terminal is intended to serve. This addition to the cable plan will permit the assignment clerk to definitely assign both the pair and the terminal number, and thus save the drop foreman the trouble of looking into the matter when on the ground.

Telephone Extensions in France.

According to the Revue Pratique de l'Electricite, the Administration des Postes et Telegraphes has decided on the establishment of telephone and telegraph lines in 57 towns and townships throughout France. The following 12 cities have also decided to set up or extend their municipal telephone and telegraph systems: Caen, Rouen, Honfleur, Troyes, Laval, Deauville, Marizy, Levallois, Montagnac, Malakhoff (Seine), Casteljalous and Beauville.

Some Data on Canadian Municipal Plants.

A pamphlet is being distributed from the press of the legislative assembly, of Ontario, containing extracts from a report on the Independent telephone systems of Ontario and containing also an article written by the board's telephone adviser, Mr. Francis Dagger, on the subject of "Municipal ownership of rural telephone systems." In this article some interesting information is given of the working of the new telephone act and some figures on the cost of installation and operation of a number of municipal telephone systems in different parts of the province, says the Electric News (Toronto).

In the following table compiled from this report column A represents the number of subscribers in the different companies named, column B the original cost of the system per subscriber, column C the annual assessment to subscribers for 10 years in repayment of the cost of the system with interest at 5 per cent. and column D the annual payment by subscribers for cost of operation.

	A	B	C	D
Brussels	700	88	*11.36	
Tuckersmith	505	56	8.37	§3.50
Chinguacousy	412	73	9.00	†3.00
Maidstone	247	44	5.85	1.00
Rochester	240	41	5.44	1.00
Sandwich South	219	65	8.42	2.00
Gosfield North	206	43	5.83	2.00
Blyth	203	93	*12.00	
North Easthope	200	65	*10.50	
Colchester, North	173	40	5.72	§3.00
McKillop	167	66	9.72	§3.50
St. Vincent	144	57	7.95	§7.00
Colborne	125	44	‡8.00	
Goderich	105	48	‡7.95	
Laird	101	38	4.22	
Tay	100	59	9.00	

*Includes cost of operation. ‡For five years, plus each payment of $15.00. §Do not own central switchboard and pay Bell company for switching. †Pay Bell company for switching half system.

It is pointed out that the payments under B cease at the end of ten years, the original debt being wiped out. It must not, however, be understood that at the termination of this period subscribers will obtain service at the figures given at the article under heading D, as provision will then be made for such construction and renewals of plant as may from time to time be rendered necessary by depreciation and obsolescence. The cost of this provision will have to be assessed against the subscribers, in addition to the amounts now paid for operation and ordinary maintenance. What the actual amount of such an assessment would be depends very much upon the quality of the equipment and the manner of its construction when the system was first built.

For this reason it is important that municipal systems be well constructed and only the best equipment adopted in the first place, as a badly-constructed system, with inferior, because cheap, equipment, may require almost total replacement at the end of ten years, which would necessitate the continuance of an assessment nearly approaching the figures in column C.

With a properly engineered and well built system, using high-grade equipment, a yearly amount not exceeding half the original assessment should be ample to take care of all necessary repairs and reconstruction. Assuming this to be so, in a system such as Chinguacousy, the subscribers of which now pay $9 in repayment of principal and interest, plus $3 cost of operation, would at the end of ten years pay $4.50, plus $3, or $7.50 per annum, instead of $12 as at present.

In considering this matter there is, however, another element to be considered, which is that the act provides for additional subscribers paying the same assessment as the original subscribers who shared the cost of building the main pole leads and of equipping a central office to accommodate many more telephones than were installed at the start.

It will be apparent that the cost of connecting additional subscribers using the same central office equipment and pole leads which have already been paid for by the original subscribers, is very much less than the amount paid by these original subscribers. This difference is set aside by the municipality as a reserve fund to be expended on maintenance, re-construction and extensions, and it is within the range of possibility that by the end of ten years this fund may have reached a proportion which would considerably reduce the amount to be assessed against subscribers on account of depreciation or obsolescence.

Tri-City Company Accepts Moline Franchise.

The Tri-City Automatic Home Telephone Co. has accepted the franchise recently voted it in the city of Moline, Ill. The acceptance was signed by E. H. Moulton, president, and L. S. McCabe, secretary.

Illinois Company Widely Expanding.

The McHenry County Independent Telephone Co., of Spring Grove, Ill., has increased its capital stock from $20,000 to $100,000, and its authorized bonds from $15,000 to $50,000. Both stock and bonds are now being liberally subscribed for by local investors. The proceeds are to be expended in greatly extending the company's system, particularly in the town of Woodstock, where a modern plant is now being installed.

The McHenry County company now maintains exchanges at Spring Grove, Woodstock, McHenry and Richmond, with toll stations at Huntley, Ringwood, Greenwood, Solon and Johnsburg. E. H. Crowley, its manager, is now and has been for some time past, securing franchises and rights of way which will ultimately result in the ex-

Anton Schaefer. E. H. Crowley.

tension of the system throughout the county of McHenry. It was for the purpose of caring for this work that the new issues of securities have been voted.

The company was formed in 1906 as the Spring Grove Telephone Co. with a capital stock of $10,000. Anton Schaefer, now treasurer of the McHenry County company, was its promoter. The name of the company was changed this spring and E. H. Crowley, then of the Union Telephone Co., St. Johns, Mich., was secured as manager.

The line to Woodstock was built in 1911 and a franchise secured in that town. The exchange is to be built there at once, over 500 contracts having been already secured. It is also proposed, among other things, to build to connect with the lines of the Rock County Telephone Co., and the Badger Telephone & Telegraph Co., of Janesville, Wis., and to build also to Rockford, Ill., to connect with the system of the Rockford Home.

Connection with the Independent system in Chicago has just been accomplished at Woodstock, the line being formally opened a few days ago by the mayor of that town and County Judge Owens, of Chicago. This brings the entire system of the McHenry County company in touch with the metropolis. The toll lines are to be amplified at once to accommodate the increased traffic.

At the stockholders' meeting, when the increase in stock and bonds was authorized, it was also voted to increase the number of directors from five to nine. The officers of the company are: President, N. N. Weber; vice-president, J. Freund; treasurer, Anton Schaefer; secretary, H. W. Sweet; manager, E. H Crowley. C. H. Hood, formerly connected with the Illinois Tunnel Co., of Chicago, and the Inter-State, of Aurora, is associated with the enterprise in the flotation of the new securities.

Moves are made rapidly on the checkerboard of business. Have patience. Your time will come if you are made out of the right kind of material.

No Truth in Story of Inter-State Sale.

Late last week the Chicago Examiner published a direct and more or less detailed statement, declaring that the American Telephone & Telegraph Co. had purchased the property of the Inter-State Independent Telephone & Telegraph Co., with headquarters at Aurora, Ill. TELEPHONY immediately got in touch with E. J. Marshall, of Toledo, Ohio, president of the company, who made the following explicit denial:

"There is not one word of truth in the story which appeared in the Chicago Examiner. This is absolute and unqualified. No negotiations of any kind have ever been carried on between the present officials or employes of the Inter-State company and any official or employe of the Bell telephone system. And none will be considered.

"The new management of the Inter-State company believes that it has very clearly demonstrated the fact of its independence. It has expended considerable sums of money in taking over the property and freeing it from debt. It is fully prepared to spend other considerable sums in putting it in the best possible physical condition.

"The company is Independent now and will remain so. No thought even of an alliance or a merger with the Bell has ever been entertained. You cannot make this statement too strong."

This bears out completely the previous declaration of L. C. Griffitts, general manager of the company, which was published in TELEPHONY. Mr. Griffitts states further at this time that he is rapidly getting the affairs of the Inter-State company into condition and that he believes that it faces a prosperous future second to none in the Independent telephone field.

Mr. Griffitts says that the engineers are rapidly completing their survey of the properties and that their recommendations will be complete very soon. The money is in hand to carry out all their suggestions and the work will be pushed.

The dangerous character of the story of the alleged sale is apparent. It was, in part, as follows:

"The American Telephone & Telegraph Co. has absorbed another Independent company. The latest acquisition is the Inter-State Independent Telephone & Telegraph Co. The American Telephone company buys the controlling interest of the stock and guarantees interest and capital payment of the bonds.

"The Inter-State Independent Telephone & Telegraph Co. has been in the hands of receivers for about three years as the result of certain irregularities discovered in the handling of the funds. Interest on the bonds was defaulted and a protective committee, made up of Charles G. Dawes, C. S. Castle and Joseph E. Otis, was formed. This committee, according to Mr. Otis, has now been discharged and the interest on the bonds is being paid by the purchasing company.

"No official statement could be had concerning the price paid for the stock, but it is known to have been acquired very cheaply."

In view of the reported mismanagement which seemed to curse the Inter-State company before it went into the receivers' hands, it is doubly unfortunate that articles of this kind should appear now, when the organization bids fair to become firmly established. The unqualified declarations of its officers, however, in connection with the known facts, should entirely offset any ill effects from this unfounded story.

Home Company Takes Over Bell Plant.

Negotations have been closed by which the Fremont Home Telephone Co., of Fremont, Ohio, will take over the plant of the Central Union Telephone Co. at that place. While the two local exchanges will be merged, the Bell company will retain the long-distance business. The Home Telephone Co. will ask for permission to increase its capital stock from $150,000 to $250,000 and will submit a new schedule of rates for the approval of the Ohio Public Service Commission.

Court Denies Petition to Enjoin Merger at Detroit

Ingham County Court, at Lansing, Michigan, Holds that Railroad Commission Was Acting Legally and Within Its Rights in Authorizing Sale of Detroit Home to Michigan State Bell—Refuses to Issue Injunction Restraining Utilities Body

On Tuesday Circuit Judge C. Collingwood, of the Ingham county circuit court at Lansing, Mich., denied the petition of the Home Telephone Co., of Grass Lake, for an injunction against the Michigan Railroad Commission restraining the latter from permitting the merger of the Detroit Home and the Michigan State Bell. His opinion reads as follows:

"On August 14, 1912, a bill was filed in this court by the Home Telephone Co., of Grass Lake, Mich., by its secretary, Nelman F. Wing, against the Michigan Railroad Commission and others. The bill prays that the order of the Railroad Commission, which allows and authorizes the purchase and consolidation by the Michigan State Telephone Co. of the several defendant companies, be set aside and vacated. The bill asks for an injunction restraining the said Railroad Commission from issuing an order authorizing said purchase and restraining said Michigan State Telephone Co. from purchasing or merging with other defendant telephone companies. At the time of filing the bill the court was not requested to issue a restraining order and none has been issued. The order of the Railroad Commission became operative on August 15, 1912. The case was argued on demurrer.

"1. Complainant claims that Act 138 of the Public Acts, 1911, entitled: 'An act to declare telephone companies and lines within the state of Michigan to be common carriers, to regulate same, and prescribing a penalty for the violation of this act,' under which the order of the Railroad Commission was issued, is unconstitutional in that it contravenes Sec. 21 of Article V. of the constitution. And that the order and the proposed merger is unlawful because in restraint of trade and contrary to Act 329 of the Public Acts of 1905.

"The Railroad Commission claims its authority from Article 6 of the said act, which, after prescribing the fee a telephone company is entitled to receive for switching service for other telephone companies contains this:

" 'That the provisions of this section in regard to switching charges shall not apply when two or more competing companies in any locality shall merge or consolidate their property and business in such locality under the direction of said Railroad Commission of this state, or when one competing company shall lease or sell its plant, property and business to another company in the same locality, such merger, consolidation, sale or lease, if with the approval of said Railroad Commission being hereby declared lawful.'

"Is the title to this act sufficiently broad, under the constitution, to give the Railroad Commission such powers? The question is not a new one and our courts have often been called upon to determine just how far the words in the title of a legislative act included the provisions found in that act.

"The word 'regulate' would seem broad enough to include the provisions contained in Section 6 of this act under which the commission claims its authority.

"In Westgate vs. Township of Adrian, Mich., 333, the court says: 'It will be noted that the original title contains the word "regulate." Under that term very broad powers may be exercised. It means both government and restriction.'

"A long line of decisions in this state supports this view and no case can be found holding a contrary doctrine. Is the order in restraint of trade and contrary to the provisions of Act 255, Public Acts 1899, and Act 329, Public Acts 1905?

"These acts were passed by the legislature for the avowed purpose of preventing 'restrictions in trade or commerce.' Such an object is clearly within the legislative province. Telephone companies are not mentioned in either of these acts, but even if intended to prevent the consolidation or merger of such companies it does not estop other legislatures from passing laws to protect the public.

"Act 138, of the Public Acts of 1911, was passed for the express purpose of regulating telephone companies. If the legislature deemed it more efficient regulation to allow competing companies to merge under the authority of a public commission which is authorized to regulate the service and the cost to the public and to prevent unreasonable terms and conditions from being imposed upon the public, such legislation is strictly within the province of that body and not to be interfered with by the courts.

"It cannot be held that a law which protects the public by compelling telephone companies to furnish reasonable and adequate service at just and reasonable rates and charges a public commission with the enforcement of these matters creates such a monopoly as to be in restraint of trade or injurious to the public.

"A conclusion being reached on these two points it is not necessary to take up the other matters in the bill or demurrer. The bill is dismissed."

The decision is conclusive and removes the only obstacle in the way of the merger. It is not known whether or not the Grass Lake company will appeal.

Keystone Statement for July and Seven Months.

The Keystone Telephone Co., of Philadelphia, Pa., has issued its regular monthly statement of earnings and expenses. This covers the month of July and the seven months ended July 31. The figures compare as follows:

REVENUE ACCOUNT.

FOR MONTH OF JULY.

	1912	1911
Gross earnings	$101,460	$ 96,106
Operating expenses and taxes	52,070	49,062
Net earnings	$49,390	$ 47,044
Less interest charges	25,323	24,392
Net surplus	$ 24,067	$ 22,652

FOR SEVEN MONTHS ENDED JULY 31.

	1912	1911
Gross earnings	$698,651	$677,415
Operating expenses and taxes	350,766	335,984
Net earnings	$347,885	$341,431
Less interest charges	175,565	170,706
Net surplus	$172,320	$170,725

Aurora Inter-State Elects Directors.

The annual meeting of the stockholders of the Inter-State Independent Telephone & Telegraph Co., of Aurora, Ill., was recently held at Jersey City, N. J. The following directors were elected: E. J. Marshall, E. H. Cady, George W. Wallbridge, H. I. Shepherd, S. P. Kennison, George E. Dixon and B. J. Welsch, all of Toledo, Ohio; A. S. Clow, of Wheatland, Ill.; S. W. Lord, of Detroit, Mich.; C. N. King, of Jersey City, N. J.; L. C. Griffitts and E. L. Barber, of Aurora, Ill.

H. H. Evans, of Aurora; H. D. Wagner, of Hinckley, Ill.; and E. F. Lawrence, of Streator, Ill., who were previously on the board of directors, will continue as directors until 1913.

Merger in Indiana Town Said to be Off.

Because the Anderson, Ind., city council declined to grant a franchise to the Delaware & Madison Telephone Co., whereby the rates might be raised, it is understood that the proposed merger of the property of the D. & M. company with the Central Union Telephone Co. has been

called off so far as the Anderson property is concerned. It is understood that the deal will be consummated within a few days as to the property outside of Anderson.

Under the present franchise if the company ceases to operate the exchange all Anderson property will be forfeited to the city and this, it is said, may mean a municipally operated telephone exchange there in the near future.

Transfer of Property in New York.

The New York Public Service Commission has been notified that the New York Telephone Co. has acquired the physical property and business of the Citizens Standard Telephone Co., operating in Kingston, Rosendale, Shokan and vicinity, for the sum of $152,700. The consent of the commission was not necessary to the change in ownership of this property.

Cases and Discussions Concerning Public Relations

This Department Has Been Established as a Regular Weekly Review of Proceedings Before Courts, Commissions or Civic Bodies—Communications Relating to This Branch of Work are Invited from All Persons Interested in Past Cases, or Those to be Heard in the Future

Another Michigan Merger Authorized.

An order has been signed by the Michigan Railroad Commission authorizing the Michigan State Telephone Co. to purchase the Washtenaw Home Telephone Co., of Ann Arbor. These two companies have been operating in competition with each other in Washtenaw county for nearly two years. To facilitate the merger, by practically a unanimous vote, the Ann Arbor council repealed the ordinance under which the selling company was operating, without which it could not have merged with its competitor.

Commissioner Hemans, who wrote the order, says that, "at the present time, the physical property of the Washtenaw Home company, with depreciation deducted, has a value of $125,000. The property can be practically all utilized by the Michigan State Telephone Co., which makes application to take over the property at the agreed price of $11,2500."

At the date of the filing of its application, the Home company had 1,011 telephones in service in Ann Arbor, 265 in Dexter and 268 in Ypsilanti. The Michigan State had 3,403 in Ann Arbor, 1,478 in Ypsilanti and 53 in Dexter.

Maryland Commission Approves Bell Methods.

The methods by which the Chesapeake & Potomac Telephone Co. divides its subscribers into city and suburban classes were approved by the Maryland Public Service Commission in an opinion just handed down. The commission gives its approval to the charge of $3 a year which is made suburban subscribers who wish to have their names enrolled in the Baltimore lists.

The commission orders that the telephone number must be given in this city list, instead of merely stating "see suburban." If necessary the words "toll service" may be added as a guide to persons not familiar with the rates.

The commission declares that if every suburban subscriber were allowed to have his name in the city list the list would be overburdened and that confusion as to rates would easily follow.

The commission declines to make any changes in the rates of rebate it pays to owners or occupants of property where public pay stations are located, and the petition for a reduction of rates between one suburban station and another is also denied.

Would Limit Rates in Denver.

The Denver (Colo.) Chamber of Commerce, the Real Estate Exchange and the Retail Association have gone on record as favoring the telephone ordinance, which has been prepared in the interests of the Denver Business Men's Association.

James H. Brown, attorney for the Business Men's Association, and Charles W. Franklin drew up the bill. Mr. Brown said that the proposed ordinance was intended to be only a temporary one to establish lower rates for the telephone users of Denver, and at the same time compel the Mountain States Telephone Co. to submit to a physical valuation of its plant so that figures could be obtained upon which to base a permanent ordinance. He said that the company could not go into court and delay action if this ordinance was put into effect.

The ordinance establishes a flat rate for business telephones of $7 a month. Mr. Brown gave as his reason for setting that figure that the company had a contract with one of the large dry goods stores calling for a flat rate service at $7 a month. He said that it would be impossible for the telephone company to show that its earnings are less than 6 per cent.

If the company refuses to accept lower rates and to apply for a franchise, said Mr. Brown, "we should open the city to any other company and give it our hearty support."

Bond Issue Authorized in Ohio.

The Ohio Public Service Commission has authorized the Eastern Ohio Telephone Co. to issue $17,500 of first mortgage, 6 per cent. bonds, to be sold as money is needed for not less than their par value. The proceeds are to be devoted as follows: The payment of outstanding notes and accounts aggregating $14,500; and for betterments and extensions, $3,000.

The company must report to the commission every three months the amount of bonds sold and the amount of money received from the sale, also the exact distribution of the proceeds.

San Francisco Supervisors Favor Lower Rates.

At a recent meeting of the San Francisco board of supervisors it was agreed that the rates of the Pacific Telephone & Telegraph Co. are too high.

Several of the supervisors declared themselves at once for reduced telephone rates, for which they had fought when rates were fixed for this year. An ordinance to cut the charges, was introduced, but was lost.

Supervisor Fred Hilmer, chairman of the telephone rates committee, promised that there would be a considerable scaling of the charges next year and explained the failure to accomplish it before by the fact that the board did not have time to make an adequate investigation. The charter provides that the rates shall be fixed in February, and the new board going into office in January has not time to grasp the full situation.

Before next February, however, the board will employ experts to determine what is a fair rate. The charges for the current year were left practically unchanged, but more calls were allowed. This, however, was not of great

advantage to the business men, especially as there are numerous complaints that they are overcharged for extra calls, of which the telephone company alone keeps check.

Zones Rates Discussed at Baltimore.

Inferentially, an argument favoring a flat rate for telephones was recently made before the Maryland Public Service Commission by H. M. Buehler, vice-president of the Chesapeake & Potomac Telephone Co. The incident was especially striking in that the flat rate is practically no longer employed by the C. & P. company, having been abolished in favor of measured service.

The occasion was a conference between Mr. Buehler and T. P. Sylvan, special agent of the American Telephone & Telegraph Co. and the Commission. This meeting was a sequel to the one held last May.

Louis M. Duvall, secretary to the commission, reviewed the last conference and the points under discussion. He said that it was not fair to make a charge of a quarter mile if a subscriber lived but a few feet beyond that zone. Mr. Sylvan mentioned that it might be fairer to split the distance into tenths of a mile and charge accordingly. Commissioner Joshua W. Hering asked if charges per 100 feet would not be practicable.

Mr. Buehler said that the small distances would not work out equably. "It would cause lots of trouble and argument," he said, "and the whole matter will work out smoother if but one rate applies to the zone, and we do not have the zones small—"

"Are you not arguing for a flat rate for telephone service, if your argument is carried to a logical conclusion?" interrupted Secretary Duvall. "I am not asking your opinion on flat rates or message rates," continued the secretary. "I ask you, if your argument is logically developed, does it not make for a flat rate?"

Mr. Buehler did not answer the question direct, saying that it would be unfair to discriminate among subscribers on tie-lines within small zone radii.

Secretary Duvall stated that at the May conference the telephone company accepted the commission's ruling that the zone limit by fractions of a mile be modified, and also that the basis of a charge of a trunk line be the shortest distance between two points, irrespective of the route taken by the wires to make the connection. The company had agreed to make reparation for overcharges in this service.

Mr. Sylvan said that in discussing the matter with Charles E. Phelps, chief engineer to the commission, mention had been made of a route-and-maximum plan. This would mean a fixed, or maximum, charge for general service over trunk lines, but where the distance exceeds the maximum route the charge be only on the former basis. This would include strict adherence to charging by the shortest route for tenths of a mile beyond the first quarter mile.

Mr. Duvall opposed the zone charge idea, saying that a proportional charge would be more equitable.

The question was taken under consideration by the commission and a ruling will be announced later.

Delay in Bell Franchise at Ottawa, Kansas.

An ordinance providing for a 20-year franchise for the Missouri & Kansas Telephone Co., in Ottawa, Kans., and establishing a schedule of rates, has been repealed by the city council. This was done to clear the way for an amended ordinance making the time 5 years.

The ordinance provides rates after the proposed consolidation of the Bell and Home exchanges as follows: Special line business, $3 per month; two-party business, $2.50; special line residence, $1.50; two-party residence, $1.25.

It specifically agrees that the telephone company is not to apply to the Public Utilities Commission for any increase in rates until the expiration of five years from the time the rates go into effect.

House Committee Favors Regulative Measure.

Because of the success of the Maryland law regulating telegraphic traffic, the house interstate commerce committee, before Congress adjourned, took favorable action on the Cary bill, which is designed to regulate telegraph lines in every state.

The principal point in the Maryland law, and one which appealed most to the advocates of the Cary bill, is that it requires the placing on every telegram of the time it is filed at the sending station. By this means the receiver may know how long it took to transmit the message to him.

The Cary bill fixes regulations governing the receipt, transmission, delivery and preservation of messages of interstate telegraph and telephone companies. Violations of the proposed law will be punishable by not over a year's imprisonment or a fine of not more than $1,000.

An effort will be made to pass legislation to make requirements of telegraph and telephone communication uniform throughout the United States. This will be done despite the fight made against similar legislation in the sixtieth congress, when agents of the large companies contended that the requirements would entail great loss upon them.

Washington Commission Cuts Farm Sartch Rate.

The Washington Public Service Commission has entered an order directing that subscribers of the Olympia farmers' lines be allowed telephone connections with the Olympia Telephone Co., a part of the Bell system for $5 a year, this being a cut from $7.20, as fixed by the company.

Formerly the subscribers of the rural lines in Olympia were connected with that city at a cost of $3.60 a year. The Pacific Telephone & Telegraph Co. raised the rate to $7.20 and a complaint was filed.

Action Urged in Albany Case.

Attorney John H. Dugan, for the Albany (N. Y.) Civic League, has written a letter to Governor Dix urging him to prod the Public Service Commission about the alleged delay on the part of the commission in taking up the investigation into the charges made by civic bodies and residents of Albany as to alleged excessive rates and poor service furnished by the New York Telephone Co. Papers covering these points were filed with the commission by the Albany Chamber of Commerce on October 19, 1911.

A "Whisper Phone" the Latest for Theatres.

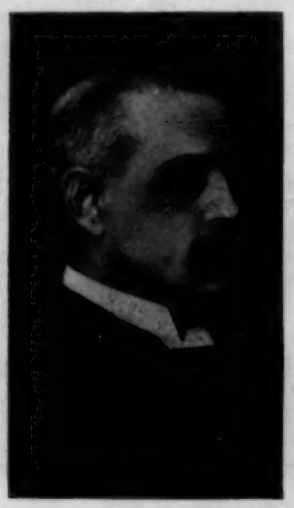
According to London, England, papers, the "whisper phone" is the latest innovation to be introduced into a theater. The first telephone system of that kind has recently been installed in the Globe Theater, London, which is owned by Charles Frohman. A telephone operator back of the scenes takes any message from outside for any member of the audience or members of the company. In the former case, the messages are re-transmitted over a delicate "whisper phone" which is connected so that every seat in the lower part of the house can be reached.

The girl is called a "whisper girl" because of the delicate transmitter she uses and from the fact that she must whisper her message in order not to disturb the performance. The members of the company are whispered to through telephones connecting with the dressing rooms. The first message the "whisper girl" received, was from a man to his wife in the dress circle, stating that he was going to return home late.

A Quartet of Men Prominent in the Telephone Field

J. BAYLESS EARLE, president of the Brazos Valley Telephone & Telegraph Co., Waco, Texas, entered the telephone business in 1899, being then a practicing lawyer. In September, 1900, he was made general manager of the Texas Telephone Co. and of the Home Telephone Co., of Waco, continuing as such until May, 1912, when he was elected president. He was also, for two or three years, receiver and general manager of the South Texas Telephone Co. He has been a director of the Ellis County Telephone Co. since its formation, in 1902, and he organized the Brazos Valley Telephone Co., which was sold to the present Brazos Valley company in 1904. He also organized and is general manager of the Falls County Telephone Co. Mr. Earle was born in Waco, June 20, 1866, and was educated at Baylor and the State universities. He is a Mason. Mr. Earle is interested in other than telephone lines, being president of the Home Light & Power Co., of Mart and Moody which he formed. He has twice served as president of the Texas Independent Telephone Association.

WILLIAM WARREN DEAN, electrical and mechanical engineer, with offices in Chicago, was born in Fairfield, Iowa, in 1863. His experience in telephony and telegraphy began while he was attending Washington University, at St. Louis. After graduation, he entered the employ of the Bell Telephone Co., of Missouri, at St. Louis, as a troubleman. He remained with this company until 1887, when he was made chief inspector. About this time he was called to South America, as chief engineer for the Compania Union Telefonica, of Buenos Ayres, and spent some four years rebuilding the system. Later he was associated with the Bell companies for a time, leaving them to go with the Kellogg Switchboard & Supply Co., of Chicago. Later he became connected with the Dean Electric Co., of Elyria, Ohio, of which latter he was president. He resigned to engage in the practice of his profession of engineer. Developing patents ready for manufacture is his specialty. His electrical laboratory is very complete and well known.



J. G. IHMSEN, general manager of the Stromberg-Carlson Telephone Mfg. Co., of Rochester, N. Y., was one of the first four men to engage in the manufacture of Independent telephone apparatus, having, with others, in April, 1895, organized the Keystone Telephone Co., at Pittsburgh, Pa. In August, 1898, the Keystone company was merged with the American Electric Telephone Co., under the name of the latter. Mr. Ihmsen assumed the general management of the combined companies in March, 1900, continuing in that capacity until July 1, 1910, when he resigned and retired from the telephone field for a time. In May, 1912, he went with the Stromberg-Carlson company. He was president of the Independent Telephone Manufacturers' Assn. from the time of its formation until his retirement in 1910. Mr. Ihmsen was born in Pittsburgh, February 1, 1872, and educated at Georgetown College. He studied law and was admitted to the bar in Pennsylvania, but never practiced. His first business experience was in the glass industry, in which his family has been prominent for many years.

CHARLES Y. McVEY, vice-president and general manager of the Cuyahoga Telephone Co., of Cleveland, Ohio, was born in Youngstown, Ohio, December 10, 1871, and was educated at the Western Reserve University. Before getting into the telephone field Mr. McVey was paying teller in a savings bank for two years, and was also in the street railway business for about five years. When the Everett-Moore syndicate became active in Ohio in the establishment and operation of Independent telephone properties, Mr. McVey associated himself with that organization and was in turn, connected with all the Federal plants. His first engagement in the telephone field was in 1899, when he became general manager of the Youngstown (Ohio) Telephone Co. In addition to acting in his present offices of vice-president and general manager of the Cuyahoga company, he was vice-president and general manager of the United States (long-distance) Telephone Co., for a number of years. Mr. McVey is a 32° Mason and a member of the Hermit, Athletic and Euclid clubs, of Cleveland.

Furore Transitoria

Our Increasing Power of Making Excuses—Some Foolish Talk, Etc.

By J. C. Kelsey

When Cain killed Abel he made two records—he became the first murderer, and he sprung the first murder defense. He claimed he was not "his brother's keeper"—non custos fratis!

We have no record that his cell was filled with flowers, or that he was lionized by foolish women, which might have been due to the great paucity of population.

Six thousand years later, a perfect lady shot her unsuspecting husband. She was furiously angry when she turned him over to the coffin trust!

She had a new malady—furore transitoria! Which, being interpreted, means that she lost her temper. And the jury turned her loose to worry a second husband!

We have arrived at the "expert excuse" age. If you observe the children, you are amazed at their power. The legal profession has this one great advantage—nearly every child has an embryo legal mind.

We have found that a legal mind does not make a popular president. We can but wonder why. His excuses and reasons have been good.

Geo. W. Perkins gives his excuse for financing the Progressive party. He wants this country a good place for his children to live in. Really, I feel sorry for these poor children!

It's getting hard for rich men to live in America. The common herd is getting too inquisitive and entirely too familiar. I would advise the anxious millionaires to send their children to Europe, surround them with servility, and in a few years they won't live in America, even if we have a Progressive dynasty.

O, let's get a better excuse! Call it Furore Transitoria! Confess that we are furiously mad at the President, and want some one else!

What a chance the president of the vacuum cleaner trust had when asked to explain why his company paid him $400,000 for a property which he had bought for $250,000. He over-looked a great bet. Instead of peevishly exclaiming, "You men are talking to us as if we were rascals," he should have proudly declared, "Gentlemen, it was furore transitoria!" The long-whiskered committee would have been completely floored!

Dooley said: "The Frinch is a tumultuous people." It strikes me that we Americans have some "tumultuous" claims. If anybody doubts it, after observing a several-cornered presidential campaign, he is hopeless.

I hope it is all a case of transitory fury. We can't always be creating Ananias Clubs and digging up Standard Oil disgraces!

Some day some one will investigate Marcus A. Hanna. He is the brilliant campaign manager who spent $8,000,000 in one campaign and did not deny it.

In his own state, the persistent Bryan ran a great race. Ohio that year polled 500,000 more votes than she ever cast before or after. It required considerable genius for the Hanna crowd to overcome Bryan's lead and get away with it.

What a peaceful, tranquil country this was in those days. No one seemed inquisitive and no one asked questions. It did not seem to be anyone's business. And you never heard of anyone leaving a party because of his children!

Furore transitoria! That is this year's disease. Why can't Senator Penrose explain his $25,000 from Standard Oil that way? What a cheap sort of a man is dear Senator Penrose! A mere $25,000 for influencing a deal not unfavorable to the liberal Mr. Archbold! Furore transitoria penrosa!

As for me, I require no further excuse. Penrose got the money. Don't you know how prevalent the idea used to be? It does not matter how he got it, just so he got it. Really, the world is growing better!

The worst case of furore transitoria seems to be among railroad men. Every railroad man, when called up to make a speech or read a paper, calls our attention to the doleful condition of our railroads!

The last wail comes from a bunch of supply men. It is touching to observe the sweet solicitude these supply men have for the railroads:

"The cost of every article used by the railroads of this country is increasing, including wages."

Now really, is not that a familiar situation? It seems to me that there are others in that same condition. And they are not trying, either.

"This is the upper mill-stone under which the railroads are being rapidly ground into bankruptcy."

No wonder railroads have trouble selling securities, when the constant wail of every speaker is "bankruptcy!" One thing I can't understand is the vast difference between their bond prospectus and their speeches.

Listen to some more furore transitoria: "Unless the policy of the Interstate Commerce Commission and the state commissions soon changes, it will require more than the magic wand of the courts and receivers to sustain even a spark of life or usefulness in at least 80 per cent. of the railroads now in existence."

Can I sell you some railroad securities, when you know that bankruptcy stares 80 per cent. of the railroads in the face? You and I know full well that such talk is pure "bunk"—furore transitoria!

The Louisville & Nashville just cut a $12,000,000 melon.

I read the other day about Jim Hill riding on the Twentieth Century Limited, with his brow all puckered up and a bunch of mysterious figures on a sheet of paper.

Did you ever hear of a distinguished guest riding on the Pennsylvania Special? Yet it is ever loaded, and it always runs on time.

No fiction story-writer could ever sell a book if the hero of the book rode on anything but the Twentieth Century Limited. And now the train is known by Hebrew millinery drummers and others as the "Century."

And another thing—the Twentieth Century Limited will wait fifteen minutes for a Western Electric employe!

Jim Hill was trying to solve the problem of bankruptcy. And it was based on terminal costs and charges.

It costs a lot of money to own a terminal, and it costs more not to own one. The poor Pere Marquette gives up $1,000 a day to get in and out of Chicago.

The New York terminal of the Twentieth Century Limited cost $180,000,000 from depot to High Bridge. You can build a good railroad from New York to San Francisco and return—round about—for that much money!

Think of it! No wonder some institutions groan with great unproductive burdens!

And it is safe to say that the Pennsylvania Terminal cost that much and more. I got lost in the Pennsylvania depot. It was so vast. The inscription above the door should read, "The Pennsylvania's Folly."

And I am inclined to believe that the reason of this great expense can be traced to furore transitoria. And the outcome will be "worry permanenta" for the stockholders!

I once listened to a very strong paper before some railroad men, where the reader gave the public fits for their sad neglect and treatment of railroads. Every handkerchief became wet, as he cussed the Interstate and state commissions.

The silly man did not seem to realize that the average commission is a real friend of the railroad.

As a matter of fact, the public gets about 20 per cent. of all their disputes with corporations because the corporation usually is right.

It is not fair to give the impression to the public that the policy of the commissions is driving the railroads into bankruptcy. I have noticed that most every decision is fair.

The judge usually decides a case, or a commission does likewise, on the evidence. If they do not get the evidence, it is a cinch that they can not give the proper decision.

Too many corporations make foolish presentations of cases anyway. Instead of trying to enlighten the judge or commission, they try to befog them.

Here is a safe bet. If the railroads honestly needed higher rates, the Interstate Commerce Commission would allow them.

A railroad costing $20,000 a mile, or even $30,000, gets loaded up to $100,000 a mile. Because the road can't earn $6,000 a mile net, when they do well to earn that much gross, then some fool railroad man cries "bankruptcy."

The best way a railroad can prove its case is by facts—If a man or a company is losing money it is the easiest thing in the world to prove it. And about the hardest game is to prove that a good earner is losing money!

What a silly fight, anyway! Because a few financial fools have promoted a wrong railroad and are losing money, the rates should be raised all over.

And besides, there is another item. The tear-stained supply man also said something else: "The railroad commissions have not treated the roads fairly on rates, and it is necessary for railroads themselves to learn how to operate their roads economically, if they wish to avoid bankruptcy."

Say, what do you know about that?

Since the railroad commissions have not been fair, the roads will have to practice economy in self-defense!

Even that statement is absurd. No corporation on earth practices economy so severely as a railroad. And hews so closely to the line.

This same applies to the telephone.

I do not believe the people of the United States will pay the price of "universal" service when local service is so much cheaper.

I don't believe there ever was a sillier contention than in the Camden case, whereby the Bell company contended for higher local rates because subscribers could get "universal" service.

"Universal" service costs more, because it has so many unproductive features. It is costing $30 to operate a "universal" telephone. And today it costs less than $20 to operate a Kinloch or Keystone Independent telephone.

So it applies to the telephone. Cut down expense before asking for higher rates. No railroad or telephone company is entitled to any increase in prevailing rates, unless the costs conform to reasonable economy.

If railroads can further economize, the railroad commissions should shut up hop until they know the last penny is saved. If telephone companies can further economize, they have no right to a higher rate until they do.

Extravagance will wreck any institution. If the habit is encouraged by giving higher rates, nothing on earth will prevent further extravagance knocking at the door again for more money.

If a company is forced to economize first, and then can not carry the burden, then no commission power on earth will prevent them from increase.

There is no excuse for a telephone costing more than $24 to operate and maintain indefinitely. A single dollar above that amount is sheer waste.

I have heard a great deal about "waste and duplication" but I insist that internal waste is a bigger curse than all outside waste and duplication.

I have been before commissions a great deal. And I have found them fair and extremely human. I find it necessary in order to get a decision, to explain things clearly and fully.

I was on a recent case where a corporation man merely quoted decisions which the legal department had kindly marked for him. The commissions prefer to give a ruling based on their own opinion. They have no grudge against any railroad or corporation.

All railroads have to do is to show their books. But they don't dare to! Some day they will get up a new set of books and show them. But the old ones are too sacred, especially for commissions when a rate case is on.

My feeble advice to railroads is to put a gag in the teeth of their calamity howlers. Send them a few marked copies of your bond prospectus. That certainly will help.

There is no mill-stone around the neck of any railroad or industrial corporation, except the curse of incompetence, indifference and red tape.

No company can hope to get away with it that does not allow its employes a chance to earn a dollar above salary, and that from the earnings of the property they serve.

No company can operate economically that holds up shams and fool theories to their employes.

And, last of all, crying "wolf" will make no headway.

I can't say that I feel any sorrow for any institution cursed with swellhead, nepotism, favoritism, private greed and extravagance.

MORAL: Be not deceived by platitudes!

The Inspector and the Telephone Troubleman

A Series of Articles Dealing in an Elementary Manner With Some of the Problems Encountered in the Operation of Small Exchanges—This Installment takes up the Subjects of Grounds and Crosses on Common Return Systems

By A. E. Dobbs

[Editor's Note—Several years ago a series of articles under this title was published in TELEPHONY and they afterward appeared in book form. The articles which took up many elementary points relating to local battery exchange maintenance met with great favor. Owing to the demand at the present time for copies of the book, the edition of which has long been exhausted, it has been decided to revise it and publish it in weekly installments for the benefit of the many who are engaged in the operation of small exchanges.]

"This young man has been with us all summer, and as he seems willing and quick to learn, I would like to have you put him on trouble until we get things straightened out."

So read the body of a note brought to George Wilson, the new electrician of the Independence telephone exchange, that had been started some two years before, but which, owing to carelessness and incompetence of former workmen, to say nothing of the total inexperience of the owner, had become badly run down. George had been working hard during the six weeks of his stay there to get things in shape, while, to add to his troubles, Mr. Risk, the owner and manager, had, in a sudden penny-wise, pound-foolish fit of economy, laid off the men who had been working there all summer, when their services could have been utilized to good advantage under George's direction. These men leaving town almost immediately had left him without any help, and although one good man can sometimes perform, for a short time, the work of three ordinary men, very few men have the physical strength to do so continually. Mr. Wilson was no exception, and the young man with the note, who had early in the summer worked with the gang as a ground hand and later had been allowed to climb when the gang was rushed with work, was sent to him as the result of a vigorous call for help.

It required but a glance at the red-headed, freckle-faced, young fellow standing before him to see that he was no lineman.

"How long have you been climbing?"

"Since last May."

"How long have you been climbing?"

"I have climbed almost every day for the last two months."

"Did you ever do anything but carry a wire up a pole and tie it in?"

"No, Sir."

"Let me see your tools."

The young man produced a pair of new climbers and a belt with pliers and connectors attached.

"All right. Do you know what a cross is?"

"Why, yes. It happens when the wires get mixed together."

"Well, that is the correct idea, though it is not the way a lineman would say it. Let me see—this note does not give your name."

"William Harrison Butler, generally called Will for short."

"Very well, Will. The wind played havoc and shook in a large number of crosses last night, and as the simplest way is the quickest, you may take the D street line, while I will follow out Pine Alley. Shake out all the crosses you see, and when you get to J. Brothers' factory, call up '900,' which is the manager's number, and ask for further instructions. Be as lively as you can, for we have a lot of trouble in today. We want to get out as much of it as we can before the subscribers find it out, for if a man fails to get one call over a telephone wire, he gets mad and tells his neighbors all about it, which we don't want him to do; all of which goes to show that the telephone is an invaluable aid to modern business, and that they miss it badly when they don't have it."

Will started out very proud of the fact that, at last, he could be trusted to go out alone and do his work without someone to show him how at every step. He found quite a number of wires crossed on his way up the street, but by dint of active hustling, he got up to J. Brothers' factory in about an hour. Here another difficulty confronted him; in all his life he had never used a telephone, and had not the remotest idea of how to call "900."

But a young fellow with a red head and a quick wit will not be caught as long as his brain holds out. Walking into the office with an air of deference and modesty which did not belong to him, he said, addressing the head of the firm: "Mr. J. your telephone line was crossed up to a little while ago, and I would like to have you call '900' to see if it is all right. Of course I could do this, but I know you will be better satisfied to do it yourself, for then you'll know it is all right."

Mr. J. was perhaps surprised at a telephone man making such a request, but he readily complied, Will Butler meanwhile watching every move with the keenest interest. The line was all right, and Mr. J. told Will that he was wanted at the telephone.

How many remember the unnamed feeling that comes over one the first time he uses a telephone; the queer sensation of delight and triumph that is almost childish and of which he feels ashamed, coupled perhaps with just a suggestion of fear as the words reach him from the distant station, and his strange wonder as he realizes that his own hesitating answers are heard and understood at the other end of the line, and that he is now fairly in touch with twentieth century civilization? Those of us who use a telephone many times a day, and swear every time we have to wait ten seconds for "Central" to answer, do not realize what a wonderful performance we are taking part in, one which is more wonderful to the scientist, who understands the complex nature of sound waves and electrical impulses, than to anyone else, and to whom the question when first considered seemed almost impossible of accomplishment. Here the sounds, first translated into electrical vibrations, go whirling, vibrating, dancing over a wire that opposes their passage, meeting stronger currents that are coming to meet them, while others cross their path, and still others try, by going the same way, to crowd them off. Still they go on, dodging some, traveling arm in arm, as it were, with some, and riding over, or through others like a strong swimmer in the surf to reappear again as sound waves in their original shape. No wonder the mathematician finds it difficult of explanation and gets lost in a maze of symbols.

Young Butler, however, did not know much about this, and he had not long to consider it, for the manager reported all the lines on that lead "clear," and sent him half a mile away to clear a "grounded" line.

Now, what is a ground? Will had often heard the line-

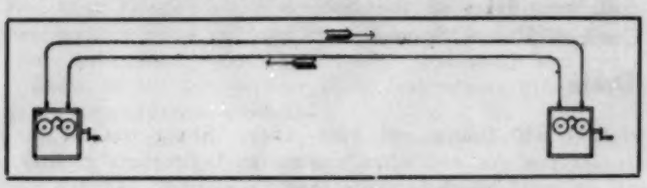


Fig. 1. A Two-Wire Circuit.

men talking about "grounds," but he had never learned just what they were, and now he was in a quandry.

Going over to the subscriber's place of business, he found that he could raise "Central," and though the conversation was not perfect, he was still able to make himself understood, and he went out wondering more than ever just what was the matter with the line. He followed the line back to the office, but could not see it lying on the ground anywhere. He was no wiser than when he started out, but just then he met George coming in also.

"Say, what kind of a looking thing is a ground?" said Will, thinking it better perhaps to confess his ignorance than to be accused of killing time.

"A ground," said George, "is a connection with the earth, either by indirect or actual contact with the ground, which is the case when a wire is broken, or what more commonly happens, by touching another grounded line or the iron framework of a building, or the wire may be crossed with its own return wire.

"Every electrical current must be returned to the place from which it started, either by means of two wires (Fig. 1) or by one wire to its destination and returned through the earth which simply serves as a conductor and takes the place of a second wire (Fig. 2). Sometimes several telephone lines are combined in one common wire which acts as a common return for all of them. This is done where there is leakage from the grounded feeders of the average trolley road which makes grounded lines scattered over a large area impracticable.

"In this office we have a common return system, that is, each wire is connected to its telephone, then passes out of the other post and the current is returned, by way of the drops, on a wire common to all of them." George drew a sketch (Fig. 3) showing how the telephones were connected to the return wire. "In addition to this, for various reasons which we need not discuss now, this return wire is grounded, though this grounding is not necessary to a common wire system. As it is, you can see that if a line wire was to come in contact with the earth, it would be the same as though it was crossed with the return wire, which, of course, would prevent current from reaching the instrument."

"But I was able to talk from this place and to ring Central," said Will.

"Well, that proves that your ground is not a very 'heavy' one, as otherwise it would have cut you out completely. Of course, if the resistance of your ground is equal to, or more than equal to the rest of the line, it follows that the current will divide and go both ways." Here George made another pencil sketch (Fig. 4) showing a circuit grounded through a resistance of 150 ohms *a*, while the resistance of the farther end of the line was only 100 ohms. "Now you see it follows that the end of the line will get more current than the ground, and if the line is in otherwise good condition, conversation can still be carried on over it. But if the resistance of the ground connection should be as low as 10 ohms, the telephone would then only get one-tenth of the current, which would most effectually cut off conversation."

"Will any kind of metal in contact with the wire ground it?" asked Will.

"No," said George, "not unless the metal itself is in good contact with the earth. Thus a wire may sometimes touch a tin roof, and yet not show a ground when the ordinary ringing current is sent over it. This is because the tin does not come in contact with anything but wood and brick, which are fairly good insulators, at least when dry. If the roof should be connected with the plumbing of the building, through water pipes, etc., it would then be grounded, because these pipes are connected with the sewer and water main systems of the city, and of course are in this way pretty well connected to earth.

"And also remember, if you have to connect the instrument to earth—for in some places they do this instead of using a return wire—connect to water or gas pipe if possible, for then you have many hundreds of feet of earth contact, but more important still, the current follows the pipe right back to the office through very little resistance. A water pipe is, moreover, better than a gas pipe, as red lead or sealing wax is used on gas pipe joints, which sometimes makes their resistance high. Besides, there is always the possibility that the gas meter may be disconnected, and unless a wire is jumpered around it, or it touches a water drain pipe in the building, the circuit will be open. Therefore, if you must connect a ground wire to a gas pipe put it outside of the meter, or, at least, put a jumper wire around the meter."

Just then they saw the telephone wire lying against a guy wire, which was in contact with a water conductor from a building. This was in turn connected through a castiron drain pipe to the ground.

"There is your trouble," said George, who noted all these points at a glance. "The wire, you will notice, has slipped off the top of the glass insulator, and if you tie it back in place it will be all right."

Will did as he was told, and in a few minutes was back on the ground beside George, who had watched his work.

"Now," said George, "we will go into the subscriber's place and make a test, for there may be other grounds on the line."

Entering the store, George proceeded with the use of his screwdriver to take one wire off the binding post of the instrument. This done, he held the wire firmly against the binding post while he called "Central." He asked her

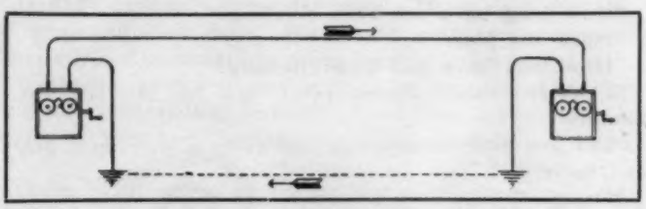


Fig. 2. Single Wire Circuit with Ground Return.

to ring on the line but at the first tinkle of the bell, held the wire away from the instrument.

"Did the buzzer ring?" asked George of the operator, again making contact with the binding post.

"No," said the girl, "it did not ring at all."

"All right," so saying he put the wire back under the binding screw.

"The line tests open," remarked George. "That shows there was no ground on the line when I had it open, so we know it is all clear. Had there been a ground, it would have rung the office buzzer. I may as well tell you also that some switchboards are so constructed that the

operator by inserting a long, or short plug, as the case may be, can also open the line so that you can ring and make this test yourself without opening the line at the instrument. But I will tell you about it some other time."

Will was kept so busy shaking out crosses and repairing wires during the next two or three days that he had little time for anything else, until one day, having been unsuccessful in finding a cross, he appealed to George to help him out.

"Let us first locate this thing," said that individual, who had meanwhile been busy renewing batteries and rewiring some old-style instruments. Going to a wall set behind the switchboard, he connected one wire from the set to the common return, and removing a clip from the fuse block on the line in trouble, inserted the other wire in the end next to the board. A turn of the crank raised the operator, which showed that the trouble was not in the office cable. Placing the wire from the testing set now on the other side of the fuse block, he tried the line end. While the bell rang good and strong, no one responded except the operator who came in on the other wire. Taking down the receiver and placing it to his ear, he blew softly across the mouthpiece of the transmitter. "That trouble is near by," he stated.

Counting down to the cable number to which the line was attached, he asked Will to go outside the building and open that wire in the cable box.

When Will reported from the pole outside that he had disconnected the wire, George rang up and got a closed circuit as before.

Looking over the cable terminals, he found a vacant one, which upon testing out, he found open. Changing the cross-connecting wire from the faulty one, to the new conductor, he directed Will to make a like change outside in the cable box.

When this had been done he tested again, and this time found the line all right. He now directed Will to take the binding screw out of the terminal post just vacated and leave it on a shelf on top of the box, in order that the post might not be used again. George, on the inside of the building, made a cross with a pencil opposite the faulty conductors.

"Say," said Will when he came in, "don't we have to

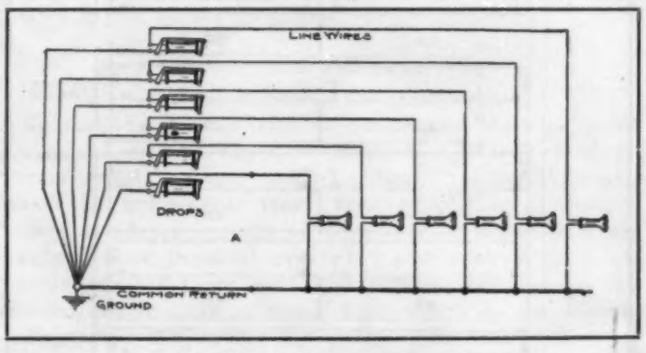


Fig. 3. Circuit of a Ground Return System.

change both of those wires? You know two lines were crossed."

"No," replied George. "Because as the two conductors are crossed and do not show a cross with anything else, we, by using only one wire, make one conductor of the two, which does no harm."

"I notice that you blew across the transmitter when you were testing. How could you tell in that way where to look for your trouble?"

"Well," said George, "that takes a great deal of practice. Besides you must know your lines, that is, you must be able to distinguish between static and trolley induction.

"Now, listen," and George handed Will a receiver. He short-circuited the instrument and blew across the transmitter mouthpiece, telling Will to notice how clearly the

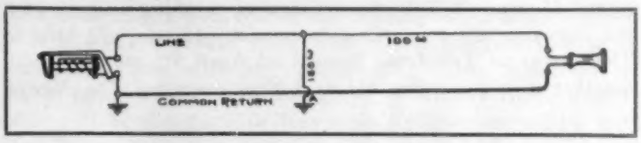


Fig. 4. Diagram Explaining Result of a Slight Ground.

disturbances on the diaphragm came back to his ear. Then changing to a long line connection, he told him to observe the difference in sound.

(To be continued.)

London Claims Practical Loud-Speaking Telephone.

A special cable dispatch from London describes a new form of telephone of which the loud speaking receiver is a prominent feature. The dispatch is as follows:

A telephone that promises to fulfill some of the utopian prophecies of imaginative novelists—a telephone that talks to you clearly and distinctly as you sit motionless in your chair—is at present working in a building not a stone's throw from Piccadilly circus. The present need for speaking—or shouting—into a mouthpiece will be obviated by the new loud-talking telephone. You will be able to walk about the room and talk in ordinary conversational tones, or even in a whisper. A little instrument like a bell push collects and carries your words, and the person to whom you are talking—without taking up a receiver, without lifting a finger—hears you as distinctly as though you were only a yard away.

Your voice comes from another little piece of apparatus—a box with a perforated opening—and when that apparatus is visible, one is ready to believe that the babble machine, borne in the imagination of H. G. Wells, has been made real a century too soon.

The inventor of this loud talking telephone is W. Kennedy-Daurie Dickson, who for many years was one of Edison's helpers, and recently he gave a group of newspaper men an opportunity to test his invention. A reporter stood in one room, with the little button-like apparatus before him on a table, and in another, some distance away, Mr. Dickson, or his assistant, spoke, shouted and whispered as they moved about. A whisper uttered five or six yards away from the transmitter came as clearly as an ordinary speaking voice in the same room. So greatly is the sound of the voice magnified, that the ordinary tones, spoken closely into the receiver, as with the ordinary telephone, seemed like a deafening shout to the listener in the other room.

The new telephone as yet has been tried out only over comparatively short distances with the idea of providing a perfect means of intercommunication from room to room in offices or factories. But Mr. Dickson claims that there is no reason why the loud talking telephone should not be used over any distance.

Means are provided to increase or decrease the sound of the voice as it is transmitted through the new telephone, and there is no reason why a public speaker should not harangue a hall full of people without leaving his own fireside.

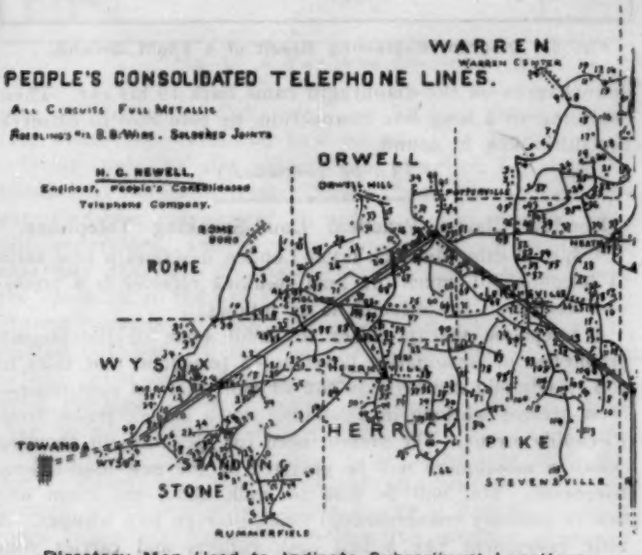
Federal Absorbs Small Company.

The Federal Telephone & Telegraph Co., of Buffalo, N. Y., has filed with the secretary of state a certificate showing the merger of the Shinglehouse Telephone Co., with the Federal company. The merger was accomplished through the acquisition of the capital stock.

Practical Subjects—Letters and Discussions

A Novel and Useful Directory Idea.

In TELEPHONY of July 27, reference is made to the directory of the Monmouth Telephone Co., as something unique, with the idea that the numeral code is new. If you will turn to The American Telephone Journal of April 27, 1907, you will see that it is somewhat old as I then described The Newell Numeral Code at length after several years' use. It may be said, moreover, that it has proven very popular and is in use in many places throughout the country. The enclosed printed matter will show that it is used extensively in our county.



Directory Map Used to Indicate Subscribers' Locations.

In the directory I send you under separate cover, the lines of The People's Consolidated Telephone Co. use it exclusively. However, I purposely left it out of the directory as of interest only to the local line. I have, however, unique features of unusual value. First, we know if a party has a telephone; second, his occupation, location on the map and his postoffice address. This is especially important in these days of rural delivery.

A map showing the rural lines of the county is given in the directory and dots indicate the location of each subscriber. Each dot is numbered, a separate set of numbers being used for each borough. Listing is made in the directory as follows:

Name.	Occupation	Location.	P. O. Address.
Beebe, Wm. A.	Farmer	34 Standing Stone	R. D. 31 LeRaysville
Hankinson, Jacob	Farmer	16 Warren Twp.	R. D. 11 Wysox

By referring to the map, the residence of each subscriber may easily be located by finding first the township and then the number as given in the listing.

LeRaysville, Pa. H. G. Newell.

Brass Foot Rail Causes Trouble.

Just after dinner one rainy day I was called to the operating room on a complaint from the operator at position No. 14 that she repeatedly received shocks. This was not an unusual complaint, as the generator frequently became crossed with the key frames so that when the operator touched a key and either a plug or jack she would get a shock from alternating current of 104 volts and either 20 or 60 cycles. In this case I could find no trouble of that nature, so went about some other work. Soon after I was called again by the same operator, but again found nothing wrong. I decided to wait for the trouble to show up again.

I didn't have to wait long, and, much to my surprise, one of the other operators jumped at the same time as the one at position No. 14. Careful tests made at both positions revealed nothing, although I knew there was trouble at times. I then watched both operators closely and found that they generally received shocks when either rang on the "sleeve" side of a party line.

Both operators generally rang with one hand before removing the other hand from the plug. Since they were always holding a plug ready to answer a call, unless otherwise engaged, one can readily see the reason for the shocks, alternating current from the sleeve of the plug through the operator to the brass foot rail, thence to the other operator, to the plug and then to ground. You may wonder how the current got to the foot rail, but remember that it was a rainy day and these two operators went to lunch without rubbers while all the others wore them.

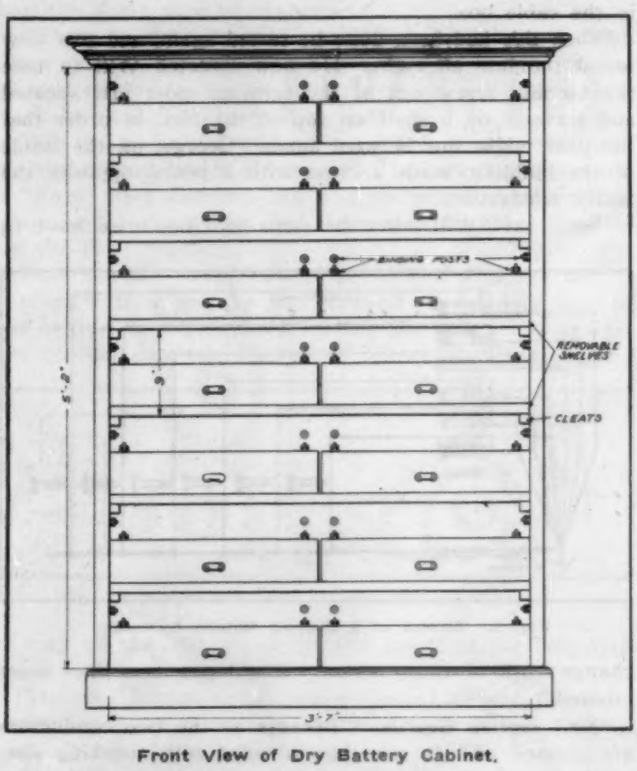
The remedy was advice to all operators to wear rubbers in wet weather.

Omaha, Neb. T. S. Risser.

A Cabinet for Dry Cells.

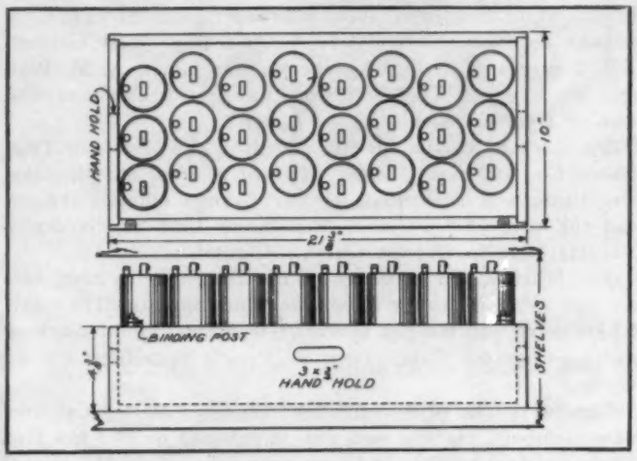
While maintaining a duplicate set of dry batteries arranged to give both positive and negative voltages of 110 volts, it was found that the number of cell failures was abnormal. The cabinet in which they were kept was accordingly remodeled and the results were so satisfactory that a description of the cabinet may be of interest to others.

The original cabinet was provided with removable front panels and three or four shelves. On these shelves, the batteries were piled on their sides. This arrangement was intended to facilitate the testing for defective ones and the making of the necessary replacements. For the remodeled cabinet, trays are designed for two to a shelf and to hold twenty-four cells. From the terminal apparatus on the outside of the cabinet, the circuit wiring is run to binding posts above and at the ends of each tray. The trays are supplied with binding posts at each end.



Front View of Dry Battery Cabinet.

The cells are placed on end in the trays and consequently exert no pressure on each other, as was the case in the original arrangement. They are connected with each other and to the tray binding posts with flexible battery connectors. Long flexible battery connectors are



Removable Tray for Dry Battery Cabinet.

used to connect the tray binding posts to the cabinet binding posts. The shelves are so spaced as to have but about a half inch of dead space between the top of the batteries and the bottom of the shelf above.

When it is desired to test out the battery, a tray at a time is slid forward, disconnected from the cabinet and taken to a nearby workbench. If the inspection shows that no cells need changing, the tray is returned to the cabinet without touching any of the battery connections. If there are cells that need changing, then the work is done in comfort with a minimum of dirt and labor. The change has reduced the number of defective cells found on a weekly test, to about one-third the number that was found before the change was made. Formerly cells that had corroded through the zinc exterior would moisten adjacent cells and quickly destroy them. This has been entirely eliminated.

The design of the cabinet interior and of a tray filled with cells is shown in accompanying sketches.

W. W. Kinsley, Jr.

More About Cable Hangers.

In the August 27th issue of TELEPHONY, there appeared an article on the superior qualities of Marlin hangers, versus metal hangers, which condemns the metal hanger under an unfavorable test. Without placing myself on record as advertising any of the numerous makes of metal hangers, from practical experience and observation, I am convinced that there are several metal hangers on the market, which have as many good points as the Marlin.

Regarding the trouble Mr. Johnson has had with metal hangers, will say, it was not the fault of the hanger but was due to the mistake which many of the small companies and also some of the larger ones make, in using the hangers for bonding between the messenger and the cable, a purpose for which they were never intended. Instead, a good heavy bond should be used, properly soldered to the cable, and clamped to the messenger at least every 1,000 feet or closer, according to the size of the cable, and the amount of foreign current the cable sheath is carrying.

In using any metal hanger for bonding purposes, one will find in a few months' time that the resistance between hanger and cable sheath is quite perceptible, through the corrosive action that takes place after being exposed to the weather. Any perceptible amount of current on the cable sheath would tend to cause a heating effect between the hanger and cable sheath, which will either melt the sheath or pit it at those points. With the use of all metal hangers, the carrying capacity between the cable and messenger is increased to a point, where the heating effect is eliminated.

If a piece of cable hung with metal hangers should be examined, one will find almost the same condition as cable hung with Marlin hangers. The only thing noticeable will be the more or less scored places caused by friction between the hangers and cable sheath, which is caused by the vibration of the cable.

I do not think the chemical action that would take place between the zinc and lead, or other dissimilar metals would be noticeable in the average life of any cable.

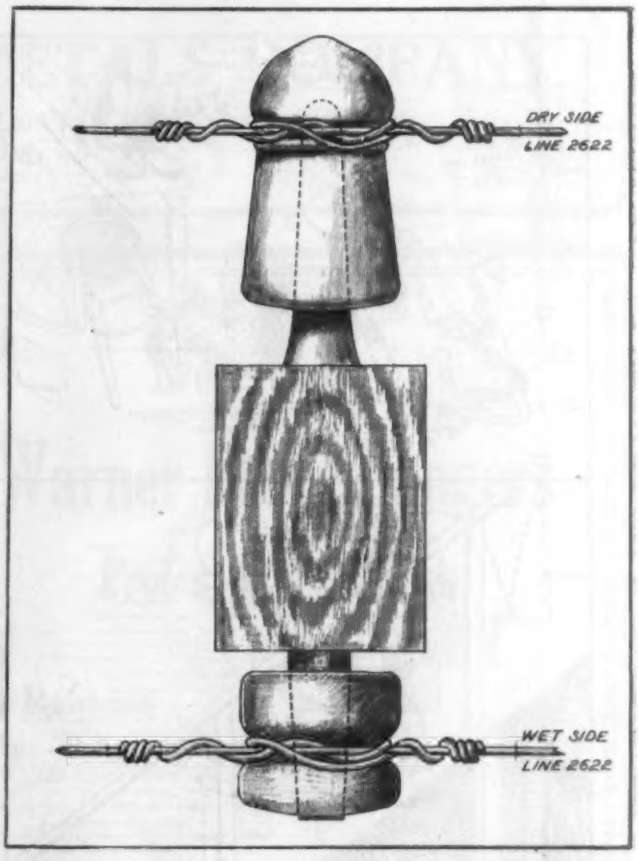
All cable should be properly bonded, whether hung on metal or Marlin hangers, as the cost of properly bonding is very small compared to the amount of trouble it will eliminate.

E. R. Hartman, Cable Foreman,
Joplin, Mo. Home Telephone Co.

Is This a Practical Scheme?

I enclose sketch of the end of a crossarm with a duplex pin glass and pony glass.

What I wish to set in motion is to let each pin be a circuit with the "dry" side on the pony glass and the "wet"



Cross Arm Arrangement Showing Location of Insulators.

side of the line on the duplex glass. I claim for this the following reasons:

1. One pin number for each circuit.
2. Position is right for drop wires to building.
3. A wire being drawn across over the top will not cause a "P. S."

If any of the readers of TELEPHONY can give reasons why this is not practical, I would like to have them.

Redondo Beach, Cal. C. E. Nicholas.

In the Rural Line Districts

Miss Mary Fullerton, chief operator of the Fullerton Bell Telephone Exchange, is having a five-room cottage erected on her farm at the mouth of Tygart creek above Fullerton.—Portsmouth (Ohio) Times.

Porterville people who took down their telephones this morning and asked for their favorite grocer or butcher were surprised to find that some mysterious agency had sneaked into the board at the central station of the telephone company during the night and mixed all the wires into a hopeless mess.

The trouble appears to have affected the selective buttons by means of which the various telephones are rung, and then are separated when conversations take place, but what the trouble is the best efforts of the trouble shooters have failed to reveal.—Porterville Item in Fresno (Cal.) Republican.

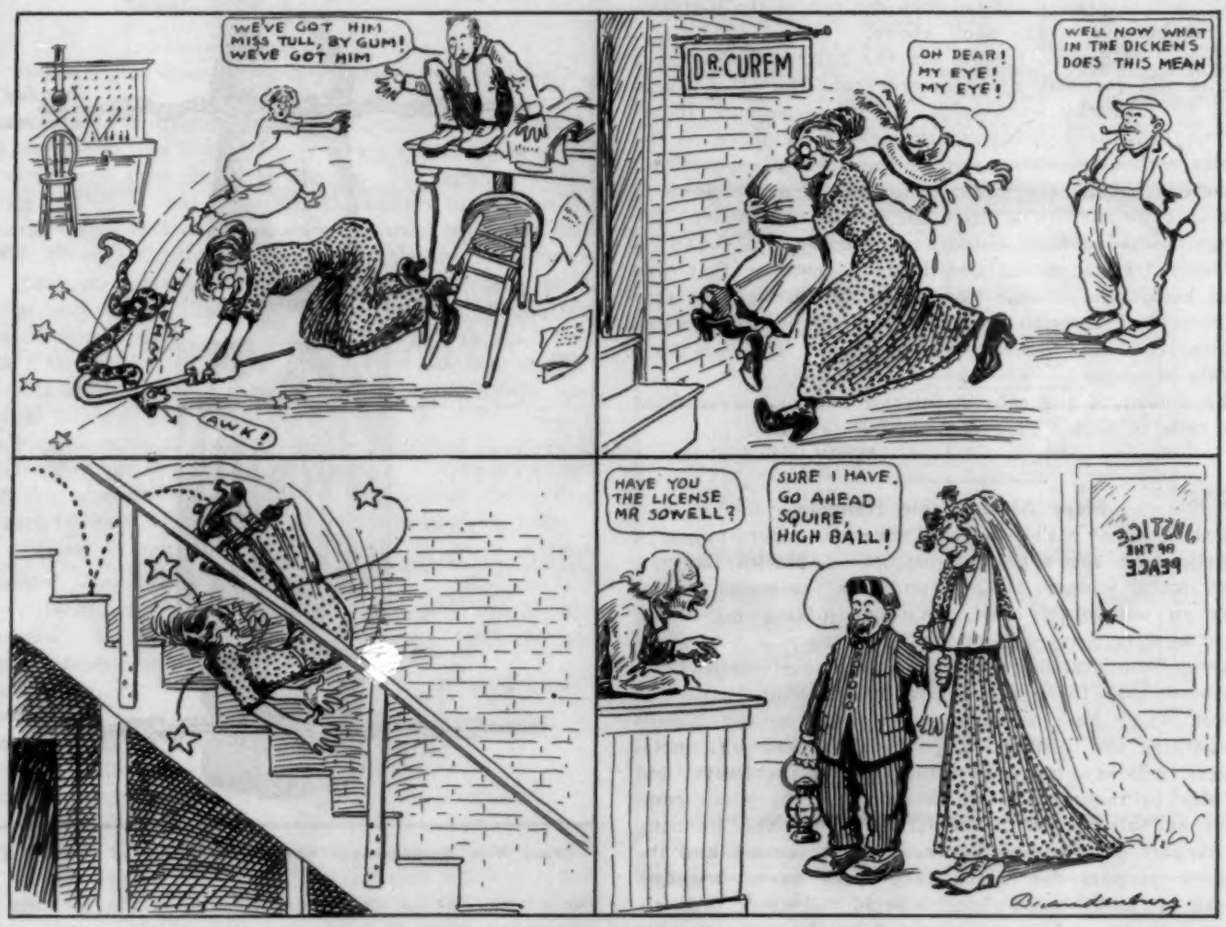
W. W. Haney, of St. Joseph, is here putting in the new 200 drop telephone exchange at the home of Mrs. Markwell. Mr. Heltzel is assisting him. It is a brand new outfit from start to finish.—Carrolton (Mo.) Record.

The Center Telephone Co., finding some of their lines too heavily loaded made some changes last week, dividing lines 4 and 5, as they were at first when the line was built, and built a new line, taking some of the patrons from lines 1 and 3 on the new line. The patrons on line 6 are as follows: Wm. Erickson, Wm. Schroeder, Mr. Eivens, C. J. Johanson, C. L. Hofwolt, J. A. Anderson, Nels Gabrielson, Henry and George Kolebeck, John Glass, A. M. Wall and Mr. Kreger. The party rings have not been changed.—Center Item in Salem (S. D.) Special.

Mr. Larson, district superintendent of the Michigan Telephone Co., and Geo. Jocque, of Garden, were out Wednesday conferring with some of our Grange officials regarding the proposed Farmers Telephone Line to Garden.—Fayette Item in Detroit (Mich.) Journal.

Mr. Murray, the manager of the telephone system, was on our ridge repairing telephones and lines on Thursday The electric storms put several telephones out of working order.—Chervier Ridge Item in Prairie du Chien (Wis.) Union.

The Steel Center Rural Telephone Co. has taken in two new members, placing two new telephones on the 159 line. The new stockholders and telephone subscribers are Wencl Jirousek and Anton Zdenahlik. To give this additional service over a mile and a half of new telephone line has been constructed.—Hope Item in Owatonna (Minn.) Press.


WE'VE GOT HIM! MISS TULL, BY GUM! WE'VE GOT HIM
AWK!
DR. CUREM
OH DEAR! MY EYE! MY EYE!
WELL NOW WHAT IN THE DICKENS DOES THIS MEAN
HAVE YOU THE LICENSE MR SOWELL?
SURE I HAVE. GO AHEAD SQUIRE, HIGH BALL!
Brandenburg.

Shawnee has broken into notoriety in good fashion. On Monday morning, June 5th, Miss Tull, bookkeeper, killed a monstrous snake in the office. And this is no snake story, either. The snake measured three feet and eleven inches. The following morning our bill clerk, Miss Hatfield, on coming to the office got a "poisonous" bug in her eye and had to be taken to the doctor's office. This kind deed Miss Tull volunteered to do. Upon returning from the doctor's office, Miss Tull fell down the stairs and broke her arm. To finish up the week in good style, Miss Tull was married to Mr. M. Sowell, an employe of the Rock Island railway. We are sorry to lose Miss Tull, but after July 1st her smiling face will be seen no more in the commercial department.—Shawnee (Okla.) Item in Pioneer Bulletin.

Are You Following Copy?

Like the printer who believed that to "reason why" was no part of his job and who obeyed his instructions to "follow copy" even to the extent of leaping out of a window through which the wind had carried the paper.

Can you "reason why" you should pay $31.50 per mile for No. 10 B & S G copper wire when No. 12 B & S G Copper Clad is more efficient and costs only $16.08 per mile?

Or why you should buy copper tie wires when you can get Copper Clad ties dead soft annealed, cut to length and burlapped at 10 cents per pound?

The "Progressive Party" in the wire field elected Copper Clad wire a long while ago.

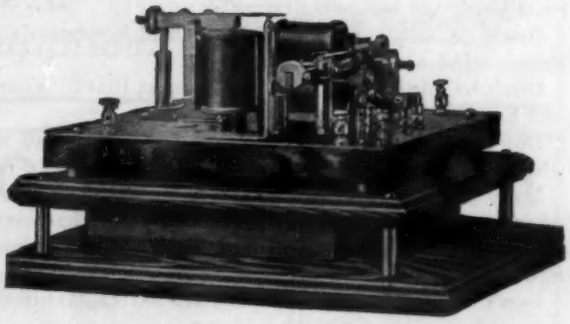
Trade-Mark
"Weld Clad"

DUPLEX METALS COMPANY

Chester, Pennsylvania

CHICAGO OFFICE
853 Peoples Gas Building

NEW YORK OFFICE
30 Church Street



Every User of
Warner Pole Changers
Profits in Cold Cash

Some of the Reasons

Enable operators to handle more lines. Subscribers get every ring clear and strong. Use current only when in actual operation.

There are 16,000 Warner pole changers giving ideal ringing service all over the world and the recommendations of their users are making our sales increase every day.

Warner pole changers are the first thought of the experienced telephone man when considering modern ringing equipment.

Warner pole changers point the way to greater savings and better service. Learn about them.

Warner Electric Co., Muncie, Ind.

Please tell the Advertiser you saw his Announcement in TELEPHONY.

OHIO PUBLIC SERVICE ACT UPHELD.

(*Continued from page* 332.)

in a municipality or locality already occupied by a telephone company furnishing adequate service, no permit is necessary for such telephone company to carry on its business under the prior exercise of its right, but no other or further exercise of any rights under said franchise can be permitted without first securing from the Public Service Commission 'a certificate after public hearing of all parties interested that the exercising of such license, permit, right or franchise is proper and necessary for the public convenience,' in a 'locality, where there is in operation a telephone company furnishing adequate service.'"

The court also found against the Logan County Farmers company in its claim that the court had no jurisdiction in the matter and that the case should have been brought before the commission for a ruling, holding that the plaintiff had the right to maintain the suit.

Some Views of Commission Control.

In a thoughtful editorial recently the Journal of Electricity, Power and Gas (San Francisco) discussed interestingly the results of commission control of public utilities by commission. It said, in part:

"The people of the state of Oregon at an early date are to vote whether or no there shall be a regulating commission over all public utilities within the confines of that great commonwealth. In embarking upon the considerations of commission regulation, perhaps no other factor is so potent for good or bad, as is that of the personnel of those having the drawing up of the enactment in charge.

"In California the public utilities act has now been in complete operation for nearly six months and, although it is early as yet to draw a complete picture of the far-reaching consequences, in the main the careful observer cannot help but come to the conclusion that the good results of this law are accomplishing more for the state of California than any other single piece of legislation of the past twenty-five years.

"Two important factors contributed largely to the success of this commission. The first factor was the the careful and studious application with which those fostering the commission idea went about their work. This application ultimately brought forth a law which combines practically all of the good features of eastern regulating commissions. The second factor is that of the personnel of the present commission.

"The California commission is composed of two middle-aged men and three ambitious young men just on the threshold of life's activity—"the old men for counsel and young men for war." The academic attainments of these young men are of the highest and the university records attest in at least two cases the highest academic standing in their respective graduating classes.

"Due to the strong entrenchment of regulating commissions in the larger municipalities of California and their opposition to state-wide control, it was thought best to leave the question of municipal regulation to the local commissions until such time that, by affirmative vote of the municipality, the state commission would be given authority to act. Unquestionably the wiser regulation is by a state-wide commission. Even now many municipalities of California are either favorably agitating the question of entrusting their utility regulation to the state commission or already have actually passed the necessary measures.

"In the passage of a utility enactment in Oregon, the framers of the act would do well to consider the merits of state-wide control—an enactment firm and just to municipality and rural community alike. Most cities do not have the money to retain expert engineers, rate men, statisticians and other expensive equipment for the work. Divided control is always confusing and the recent state-wide extension of transmission lines heightens this rate-making confusion when several separate bodies pass upon the rates.

"Unquestionably state-wide regulation is conducive of more just results to people and utility alike, for in the majority of cases, local prejudices and local political upheavals—a condition to be absolutely divorced from regulating consideration—enter not in the slightest degree in adjustments of rates and appraisals. Indeed state-wide control has every argument in its favor, not the least among which are the examples of unified state control of all eastern regulating commissions.

"In reviewing the accomplishments of the present California commission much credit is theirs for the successful and harmonious deliberations that have been brought about for the common good among public utility managers, lawyers and engineers. As an instance of this may be cited the recent call of the commission to discuss the question of "clearances." In this brief friendly discussion more was accomplished in the way of evolution toward uniformity in design in one afternoon than has been brought about in years of disconnected discussion among the utility engineers and managers.

"In consideration of the present high standing of California public utility securities and every indication of efficient and economic operation of the utility companies under commission regulation, we believe the neighboring state of Oregon would do well to emulate the essential features of California regulation in her forthcoming enactment."

Don't Be Afraid.

Don't be afraid of pleasure. It is necessary for good work.

Don't be afraid of censure. We all need toning down as well as toning up.

Don't be afraid of rivals. Things may be crowded below; there is always room at the top.

Don't be afraid to fight against odds. Most things worth having are hard to get.

Don't be afraid to be polite at all times and under all circumstances. It is no disgrace to be called a gentleman.

Don't be afraid of rebuffs. This may be your employer's method of trying your grit.

Don't be afraid to trust your boss. Confidence is a necessary part of success.

Don't be afraid of overtaxing your strength. Work kills but few people.

Don't be afraid of utilizing an opportunity unless you receive orders. Waiting often results in failure.

Don't be afraid to watch the success of your house. The fact that you are in its employ makes you a part owner.

Don't be afraid to work out your salvation. Every man must work out his own destiny.

Don't be afraid to rest if your health demands it. A strong mind needs a healthy body.

Don't be afraid to forget your work at times. Your work will be the better for it.

Don't be afraid to relieve your boss of care and worries when you can.

Don't be afraid to give your fellow workman a boost where you can. Generosity shows a man's character.

Don't be afraid of failures. They are often promises of future success.

Don't be afraid of fear.—Mountain States Monitor.

Severs Bell Connection—Takes Independent.

J. T. Knode, division manager for the Cumberland Valley Telephone Co., with headquarters at Martinsburg, W. Va., has just closed a contract for interchange of business with the Inwood Rural Telephone Co., of Inwood, W. Va. The latter company has some seventy-five subscribers, which it expects to increase to upwards of 100 by the first of the year.

In making this contract with the Cumberland Valley, the Inwood company severed similar relations with the Chesapeake & Potomac Bell. In a public statement given out by the officers of the rural concern, it is declared that the Bell company had dealt most unfairly with the smaller company and had failed to keep many of its important agreements with it.

Mr. Knode has been in charge of the district less than a year and has closed over 150 contracts during that time.

How Much Overtime

do your toll operators get? If they are using a visible clock dial and pencil to record time, your company is certainly losing part of the revenue it earns.

Electric jumping and continuous moving time stamps are not much better, as the brain must still be employed to perform the operation of subtraction and errors are inevitable.

THE CALCULAGRAPH

subtracts the time of starting a toll conversation from the time of stopping and prints the **time the toll line is used.** It saves all the "excess minutes" and increases revenue.

The Calculagraph is used in every country in the world and is for sale by all the prominent manufacturers of telephone switchboards.

CALCULAGRAPH COMPANY

1416 Jewelers' Building **NEW YORK CITY**

You Can't Lose

If You Specify

Roberts Self-Cleaning Arresters

No. 66

They save you time, annoyance and money. They will keep your lines clear and help to improve your service.

Specify them in your next order to your Jobber, or write us direct for more information.

Our prices will please you too.

Roberts Arresters are handled by leading Jobbers and your order specifying them will be a winner for you.

Homer Roberts Mfg. Co.

659 Melrose St. :-: :-: **Chicago**

Do You Need Supplies?

Drop a line to TELEPHONY and get in touch with all companies that can supply your needs through the medium of our

Advance Bulletin

It costs you nothing.

COMMONWEALTH HOTEL

INC.

Opposite State House,

BOSTON, MASS.

Offers rooms with hot and cold water for **$1.00** per day and up, which includes free use of public shower baths.

Nothing to Equal This in New England

Rooms with private baths for **$1.50** per day and up; suites of two rooms and bath for **$4.00** per day and up.

Dining Room and Cafe First Class. European Plan.

ABSOLUTELY FIREPROOF

Stone floors; nothing wood but the doors.
Equipped with its own Sanitary Vacuum Cleaning Plant.

Strictly a Temperance Hotel ***Send for Booklet***

STORER F. CRAFTS, General Manager

Patent Pending

"Hy-Po-Stat"

The All Metal and Porcelain Cable Protection
This is the terminal that

"Protects Your Cables"

and makes your investment a permanent one
For further information ask your jobber, or write

The Royal Electric Company
SIDNEY, OHIO

Please tell the Advertiser you saw his Announcement in TELEPHONY.

Sparks from the Troubleman's Department

One Way to Win a Bet.

"I have made a bet with a friend and we have agreed to leave it to the Star to decide," said a voice over the "Information" telephone in the Star office yesterday.

"The question is, How many years was Roosevelt president?"

"Seven years," was the answer given.

"How's that?"

"Seven years."

"Nine years, hey?"

"No, seven years."

"Yes, that's just what I said, nine years."

"No, not nine years—seven, s-e-v-e-n, seven years."

"That's just what I bet, that he was president nine years. My friend bet it was seven years. So I win, hey?"

"No, you lose."

"All right; so your decision is that Roosevelt was president nine years, and I win the bet. Is that right?"

"No, sir, you are wrong; you lose and the other man wins."

"Yes, sir, thank you;" and before he hung up the receiver he was heard to say:

"He says Roosevelt was president nine years and that I won."—Kansas City Star.

The Rubberneck.

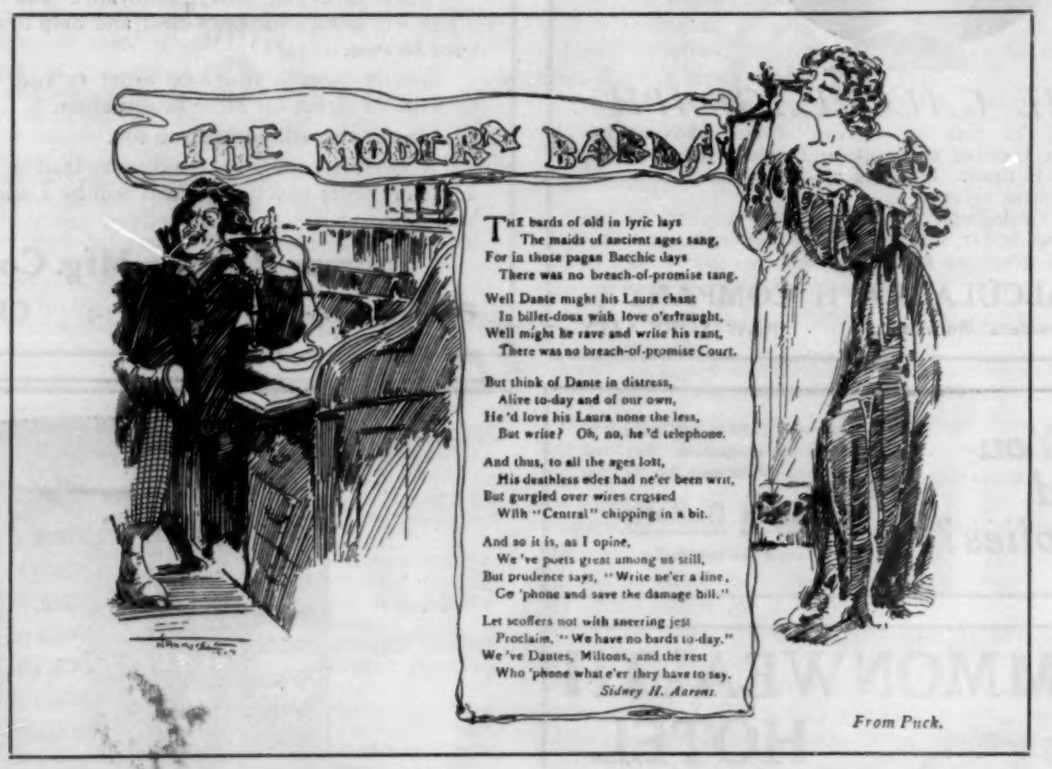
Over Dawson way, says the Montgomery (Ala.) Times, the eavesdropper on the rural telephone line seems to be a nuisance beyond the reach of human ingenuity. These curious pryers into the affairs of other people have gotten on the nerves of Editor Rainey, of The Dawson News, and he prints an editorial roast with the following experience, related by a rural patron of a community line:

> When central gave the required number of rings for the phone I heard seven receivers come down. The gentleman called for didn't answer promptly and while listening for his "hello," I heard a rooster crow, a dog bark, heard a woman tell Johnnie to bring in some wood, heard a clock strike eleven, heard a mule bray and heard a woman say, "Children, if you don't keep still I'll whip you good." This all happened in less than a minute, perhaps. At last the gentleman answered my call. As soon as he ascertained who wanted him, he said: "Yes, I got your letter, but I will have to write you a letter; there are so many durned listeners on the line that a man can't transact private business over the wire." And he hung up.

Some of the people who read these lines may profit by them. There is also a party line as well as a country line. Time after time has it been suggested to The Times to call attention of the public to the littleness and ugliness of eavesdropping over the telephone.

The Bachelor's Friend.

A bachelor who occupies a Brookline flat likes asparagus. The other day he took it into his head to buy two bunches and cook them in his room. After he had it there he found that he did not know how long to cook it. "Get the telephone book," said he to the chum who was with him, "and we'll find out." The flat dweller flipped the pages open and took a number at random opposite a name we call Blank. Then he picked up a telephone receiver and called it. A husky male voice answered him. "Is this Mr. Blank?" asked the flat dweller, pleasantly. The voice said that it was. "Well," said the flat dweller, "please let me talk to Mrs. Blank." In a moment a feminine voice answered. "Mrs. Blank," asked the flat dweller, "how long do you cook asparagus?" "Twenty minutes," said an astonished voice; then "who is this?" But the flat dweller had hung up his receiver and was busy with his oil stove. "It always works," said he. "You don't have to know them; just ask any one."


THE MODERN BARD
THE bards of old in lyric lays
The maids of ancient ages sang,
For in those pagan Bacchic days
There was no breach-of-promise tang.
Well Dante might his Laura chant
In billet-doux with love o'erfraught,
Well might he rave and write his rant,
There was no breach-of-promise Court.
But think of Dante in distress,
Alive to-day and of our own,
He 'd love his Laura none the less,
But write? Oh, no, he 'd telephone.
And thus, to all the ages lost,
His deathless odes had ne'er been writ,
But gurgled over wires crossed
With "Central" chipping in a bit.
And so it is, as I opine,
We 've poets great among us still,
But prudence says, "Write ne'er a line,
Go 'phone and save the damage bill."
Let scoffers not with sneering jest
Proclaim, "We have no bards to-day."
We 've Dantes, Miltons, and the rest
Who 'phone what e'er they have to say.
Sidney H. Aarons.
From Puck.

"During a recent thunder storm" writes a reader of TELEPHONY, "a woman called a friend and when he cau-

EVERY PROCESS

of the manufacture of **Roebling Double Galvanized Telephone Wire** is conducted with one end in view —to produce durable, uniform wire of high conductivity.

The metals used are carefully selected, subjected to exacting tests to prove their quality, and protected against rust by real galvanizing.

John A. Roebling's Sons Co.

TRENTON, N. J.

We make also Hard Drawn Copper and Copper Clad Steel Wire, Wire Strand and Telephone Cables.

Sturtevant

REG. U. S. PAT. OFF.

ELECTRIC

Booth Ventilators

(Patented)

¶ Any telephone company will profit by pleasing the discriminating public and by attracting prospective patrons with a booth made pleasant by Sturtevant ventilation.

bring better service—more calls. They bring many calls to a cool, fresh booth where the ordinary stuffy, hot booth is avoided.

¶ They send your patron away pleased, to advertise your service and to bring you greater revenue.

¶ Sturtevant ventilators run quietly and ventilate one or more booths with a flow of air that is positive but gentle. The cool, fresh air is blown into the booth and the foul air is forced into the dead space between the walls. Here its velocity is changed in going through our patent exhausts and the transmission of sound outside the booth absolutely prevented.

¶ Install Sturtevant ventilators on booths at railroad stations, hotels, clubs, etc.

¶ You will soon notice the profit of the increased calls and the profitable mouth to mouth advertising of your pleased patrons.

Write today for Folder BT8 giving prices and particulars.

B. F. Sturtevant Company

General Office and Works: HYDE PARK, MASS.

and principal cities of the world.

For sale by WESTERN ELECTRIC CO., offices in all principal cities

Please tell the Advertiser you saw his Announcement in TELEPHONY.

tioned her about using the telephone during a storm she said she was not afraid as she had done as the installer instructed her, so she was safe. He had told her to put a bucket of water on the floor under the telephone and a cup of it on either side. Wouldn't that jar your battery loose?"

An Interrupted Dialogue.

A traveling salesman was enjoying an ice-cream soda in a suburban drug store, when he looked up and saw a boy in short trousers, with his back toward him, seated at the telephone desk. The boy had the receiver at his ear and seemed much worried. This is what the salesman overhead:

"I want three, one, four, five. Is this you, Chub? Good! I hoped you'd answer. This is Jeak. Say, Ginn Perkins took Lucy Baker to a picture show last night."

"_____"

"Ced Kinney tol' me. Then I made Ginn own up."

"_____"

"I waylaid 'im comin' home from school."

"_____"

"I sure did! I give 'im a black eye an' a bloody nose. Mebbe I broke it for 'im, I dunno. I sure gave it to 'im hard."

"_____"

"That's what I wanted to call you up about. Has dad got home yet?"

"_____"

"One eye is about swollen shut. Anyway, I can't see out of it."

"_____"

"And I must have lost a front tooth—I can't find it, and it's gone."

"_____"

"Been over to Punk's trying to wash the blood off."

"_____"

"Um-hm Ginn got it a hull lot worse 'an I did."

"_____"

"Where are the folks now?"

"_____"

"Say, Chub, if I come roun' the back way and sneak roun' the side, can't you throw me that little pillow from our room?"

"_____"

"Want it in case something should happen. I might meet dad in the hall."

"_____"

"No. The big one'd be too suspicious."

"_____"

"Had the little one the las' time, an' it didn't seem to do much good—at least, not as much at it ought to. Now, Ch—"

"_____"

"Yes, sir. I'll come home right away. Honest, dad I didn't know 'twas so late."—The Transmitter.

"Say, Snibbs, let me use your phone, will you?"

"Sure. What's the matter with yours?"

"It's all right. I want to telephone to my wife that I'm going to bring a man from out of town to dinner."

"Well?'

"He's sitting in my room now, and I hate to have him watch my face when my wife tells me what she thinks of the proposition."

A man called up a big office on the telephone and got a saucy greeting from an office boy while asking the man who he was and what he wanted.

"Oh, I'm only the president of your company," the man answered, "so you needn't be polite to me; but please do be to others.'

Duty.

Your best is never too much to do
And your best is never too much to give
In the service of those who look to you
For the joy they have and their right to live.

To cheerfully do the best you may
Is never too much for the wage you get,
And whoever does less, whatever his pay,
At the end of the day is deep in debt.

The best you may do is never too great
For the chance you have and the joys you claim,
And they that do less keep selecting Fate
To be vainly cursed and to bear the blame.

—Chicago Record-Herald.

He Wanted to Pay His Bill.

A Filipino patron at Santa Barbara, Cal., who has a black portable set installed in his home, evidently prefers a brighter instrument. He also desired to pay his bill, and sent the following request for a special collector to call on him:

Dear Old Manager:

Please send any of your sacrilegious colectors at the 503 E. Anapamu (basement) for the rent of the dark corner of my life; I mean; this old black funebre instrument with the profane humanity call the telephone.

Yours most sincere serviteur.

Santa Barbara, Cal.

Dear Old Manager:

From yours colectors I prefer monsieur Gray.

Yours sincere serviteur.

—Pacific Telephone Magazine.

Men We Like to Meet.

There are men we like to meet,
Smiling men with hearty grips,
Men with sunny natures, sweet,
Men with laughter on their lips,
Men who bear their little cares
Cheerfully from day to day,
Men who mind their own affairs
And go singing on their way.

They're not whining all the time
Just because their plans go wrong,
They're not always talking crime,
Grumbling that the years are long;
Whimpering that other men
Bar the paths they seek to tread,
Always living o'er again
Scenes of grief, dismay and dread.

But the men we like to meet
Talk about the joys of earth,
Prate of vict'ry, not defeat,
Talk of fun and honest mirth,
And they often wear a smile,
Very seldom are they glum,
Thinking, speaking all the while
Of the joys that are to come.

—Detroit Free Press.

A wheeze sent in by Asher Hadley, Pittsford, Mich.: "Village troubleman wants to know how to kill induction from gasoline arc-lights."

¾ Mile of Cable Saved from Ruin

One of the leading Indiana telephone companies built an expensive cable line

Almost a mile of it was continually giving trouble on account of crystallization caused by tapping of the branches of trees through which the line ran. The cost of constant repairing was so large and the service so poor that it was thought necessary to abandon this line and rebuild along another route.

Instead—they saved their line by installing Aerial Conduit. It is the one sure, inexpensive and thoroughly satisfactory way to protect cable where it runs through trees.

Learn about Aerial Conduit—perhaps it will save for you.

Aerial Conduit Co.
N. G. Hunter, Pres.
Wabash, Ind.

TELEPHONE WIRE

We Guarantee
Greatest Efficiency
Longest Life
Most Satisfactory Service
Lowest Cost of Up-keep
In the Use of our wire.

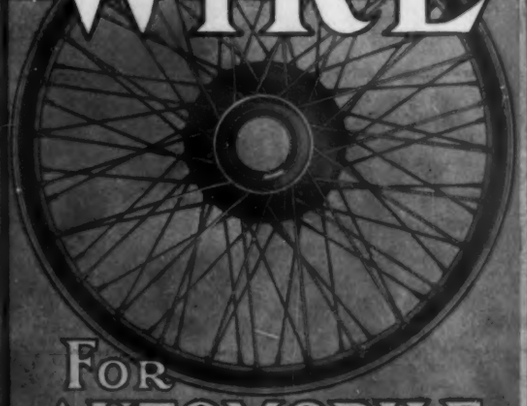
Write for FREE SAMPLE
Make Test and Comparison

Approved by Leading Institutions of Technology and Telephonic Science. Handled by most representative Jobbers and Supply Houses.

Indiana Steel & Wire Co.
Muncie, Indiana.

AMERICAN STEEL & WIRE CO'S

WIRE



FOR AUTOMOBILE WHEELS

WIRE WHEELS mean nearly 70% more tire mileage over wooden wheels because the bare rims and wire spokes radiate the heat; and further, they softly float over obstructions while wooden wheels rigidly bounce. Wire wheels are much stronger by actual test, and are also considerably lighter, especially at the rim and this materially economizes engine power. Eighty per cent of recent Grand Prix racing cars were equipped with wire wheels; and this is about the percentage of wire wheels used on all pleasure cars in Europe. They are destined to become universal as their beauty, economy and engineering advantages make them the only correct wheel for automobile use. You should insist upon having them on your car. Write for our *American Wire Wheel News*, fully describing all makes and methods of manufacture, and how you can adapt them to your car.

Frank Baackes, V. P. and G. S. A.
72 West Adams Street Chicago

Some of the Essentials of Success in Salesmanship

Annalysis of Qualities Which Promote Accomplishment in Selling Field—Principles Laid Down for General Merchandising Which Apply Equally to the Selling of Telephone Service—Abstract of an Address Published in Electric Journal

By T. H. Bailey Whipple

Competition is so keen, and price and quality of competing products among the leading staples are so rapidly approaching a plane of closely approximate equality, that greater skill is now necessary to the accomplishment of success in salesmanship than at any previous era in the long history of commerce. In considering the question of the adoption of salesmanship as a profession the wisest plan would be to give due consideration to the essentials of success.

The essentials of success in salesmanship are:

1. A correct mental attitude toward the vocation of salesmanship.

2. A comprehensive knowledge of the products offered for sale and of competitive products.

3. The utilization of such knowledge of your own and competitive products. This involves the art of putting things, the power of commercial analysis, the power of demonstration. Not merely the power of logical argumentation, but the persuasive power that clinches the sale. By strong argument you may carry conviction to the mind of a prospect, but by insufficient tact you may fail to transform this conviction into the willingness to sign the desired order.

4. Industry. This quality should be constant, systematized and directed with intelligence and zeal. Success depends not so much upon the "genius of inspiration" as upon the "genius of perspiration."

5. Confidence. This strong quality is based upon the merits of your proposal; the reasonableness of your prices and terms, and consciousness of your worthiness as a salesman. This is "confidence without conceit."

6. Respectfulness. This involves an agreeable disposition, permitting an alignment with your company's policy and successful co-operation, both with associate employes and with your customers who purchase for re-sale, and also fairness to your competitors when it is necessary or advisable to mention them or their products.

Some of the Higher Characteristics.

All of these qualities should be coupled with the one imperative requirement, which must always alloy itself with every other element of the art of selling, namely, gentility of bearing and conduct and another equally imperative quality, health.

It should be noted that in these essential elements of success in salesmanship, no mention has been made of the higher characteristics and qualities of initiative, intuition, tact, diplomacy, memory, imagination, charm of manner, judgment, knowledge of human nature. These omissions are due to the belief that success, within the limitations of the average salesman, is due almost wholly to the talent for hard work, together with earnestness and sincerity, associated with kindliness, fair mindedness and patience and also to the writer's belief that the sales problem must, to a very large extent, deal with mediocrity and its refinement. To employ and modify an idea of Lincoln's, God must have loved the mediocre, else he would not have made so many of us. At any rate, mediocrity and its utilization play a prominent part in the economy of commerce and its higher refinement will increase commercial efficiency and will prove the chief measure by which trade supremacy will be achieved and maintained.

From the foregoing it is evident that the salesman can be educated and moulded or, to use a shop expression, can be manufactured from raw material of reasonable suitableness, and the belief of almost universal acceptance to the effect that "the salesman is born, not made," is largely erroneous and unfortunately misleading and discouraging. A "born salesman" with equal training may reach a higher success and a quicker success, and that is all. This "bornness" often entails so many infirmities of genius as to greatly modify its value. In the game of salesmanship, as it is beginning to be played today, "bornness" untrained cannot compete with highly trained mediocrity. This is especially true in the sale of products requiring engineering and technical knowledge.

What is Required of the Salesman.

Successful salesmanship means correct theory put into successful practice. It means the welding of self-reliance to up-to-date co-operative methods; it means the conversion of capacity into ability; it means facing with courage life's conditions as they are, and adapting one's self advantageously to such conditions. It means the proper adjustment of self into the machinery of commerce and human affairs. It means adaptability, resourcefulness, courage, patience, fortitude, quick perception, optimism and enthusiasm. It means, in its higher sense, skillful and harmonious execution upon the keyboard of human nature. The profession is dignified enough and its highest exactions are universal enough to challenge the admiration, interest and genius of the greatest intellects. One who feels himself above it or who is actuated in its adoption solely by mercenary considerations, had better turn back and devote his time and talents to some other pursuit.

We are built upon certain lines of taste and aptitude and while sheer intellect and perseverance can overcome many of Nature's handicaps, it is best, when choosing a life profession, not to put square pegs into round holes. The man endowed with a super-abundance of nervous energy and balancing qualities, will make the most successful salesman, while the man of phlegmatic temperament had better turn his attention to some calling where pronounced personality, energy and magnetism do not count for so much. With the qualified salesman, there is no uncertainty concerning average results within certain time limits, yet the inherent nature of the vocation spells uncertainty as to immediate or specific results. The profession thus incorporates the elements of speculation and sport, which excite interest and are a perpetual stimulus to one who loves the game. This question of the salesman's attitude toward the profession could be indefinitely expanded, but enough has been said to indicate that it is the corner stone in the foundation of the salesmanship structure.

The second essential of success in salesmanship, as mentioned in the foregoing, was a comprehensive knowledge of the products offered for sale and of competitive products. We are now entering the realm of practicality and are moving away from mere theoretical consideration. The teaching of salesmanship theoretically or in the abstract is of

TRADE
ELECTROSE
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REG. U.S. PAT. OFF. & FOREIGN COUNTRIES.

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STANDARD OF EXCELLENCE

Sixteen years of
Satisfactory Service

Employed by the
Foremost
ELECTRICAL MANUFACTURERS OF THE WORLD

Receiver Shells, Mouthpieces, Terminal Strips and Blocks, Jack Panels, Bases, Knobs, Etc.

INSULATING PARTS OF SPECIAL FORM MADE TO ORDER

Sole Manufacturers

ELECTROSE MFG. CO.
Robert Gair Bldg.
Washington and Front Sts., BROOKLYN, N. Y.

PARAGON SELLERS CO., 162 N. 5th Avenue, CHICAGO

Underground
CONDUIT SYSTEMS
our specialty

WORK STARTED
AT ANY POINT
WITHIN 48 HOURS

Write us for estimate

G. M. GEST
Engineer—Contractor
Executive Office
277 Broadway, New York

Cincinnati
Chicago
San Francisco
Montreal

Carrying 30 feet 3-inch socket joint conduit.

Orangeburg
Fibre
Conduit

("Admitted to be the best Fibre Conduit")

Made in FOUR STYLES OF JOINTS
Socket, Sleeve, Screw and Harrington
WITH BENDS AND FITTINGS FOR SAME

Is the lightest conduit made

and means low freight and cartage costs

Send for The Conduit Book

THE FIBRE CONDUIT COMPANY

103 Park Ave., New York
1741 Monadnock Bldg., Chicago
S. B. Condit, Jr., & Co., Boston, Mass.
Bryant Zinc Co., Chicago, Ill.

MAIN OFFICE AND FACTORY
Orangeburg, New York

McClary-Jemison Machinery Co., Birmingham, Ala.
Tri-Provincial Electrical Supply Co., Winnepeg, Can.

Pierson, Roeding & Co.,
San Francisco, Cal.
Los Angeles, Cal.
Seattle, Wash.
Salt Lake City, Utah.

relatively small practical value to the student. It is on a par with teaching moral and mental philosophy, psychology, metaphysics, ethics, business etiquette, etc. The most practical way to teach the art of selling is in the field, but even field training would be much more effective if the student entered upon field work with a thorough previous knowledge of the products offered for sale. Sales application of knowledge should follow the acquirement of the broad fundamental principles and distinguishing characteristics of the articles offered for sale.

Too many so-called salesmen get much of their business education in the "University of Hard Knocks." The profession would be more respected if the trade had not so often been the victim upon which the ignorant novitiate practiced. Business men are supposed to be the very sanest of human beings, priding themselves upon their sound judgment and exacting value for every heavy expenditure and yet they delegate their very fortunes, prosperity and reputation to the performance of salesmen more scantily prepared for the trusteeship than is the barber for the practice of his trade. The writer's observation of salesmen in the field, an observation extending over many years, is that the average salesman possesses but a limited knowledge of the products he handles and that his knowledge of the art of selling is even more meagre than his knowledge of the goods offered for sale. Surely not one salesman in twenty utilizes to a high degree his native ability, but is satisfied to operate at from 20 to 40 per cent. of his normal mental capacity.

Years of close observation have convinced the writer that most salesmen proceed upon a haphazard basis, acquiring but little knowledge of their business that cannot be acquired by unconscious absorption and giving even less attention to the refinement of methods of presentation of their knowledge to the prospect. The same indifference applied to any other profession or even trade, would inevitably spell failure. It is no wonder that statistics prove that, of those entering the ranks of salesmanship, only 5 per cent. succeed. In the face of severe competition success does not come easy, even with the best of equipment, and it is strange that greater stress is not laid, by both employers and salesmen, upon the necessity of thorough preparation for sales work.

The Cost of Incompetency.

This willingness to be satisfied with the minimum, not trying to do one's work to a finish, not constantly endeavoring to be a 100-point salesman, accounts for the many failures and the low average of success. It is claimed that incompetency costs the city of Chicago one million dollars per day. John Wanamaker says that incompetency costs his company $25,000 per day. The high percentage of inefficiency is not due to lack of capacity, but to indifference, to mental laziness. The average salesman, in the treatment of his profession, vegetates and does but little thinking aside from the mechanical or automatic kind. If salesmanship were treated as seriously as other professions, the cost of the exploitation of merchandise would be reduced by more than half.

The purpose of any salesman's educational endeavor should be:

1. To do all within one's power, during business hours and leisure hours, to acquire a thorough knowledge of the theory, characteristics and application of his own and competing products.

2. To continue this study assiduously as long as one is engaged in the sale of apparatus.

3. To daily consider the possibility of improvement in the art of presenting the advantages of one's product to the trade.

4. To daily study better methods of enlisting the attention of the prospective customer.

5. To daily study better methods of maintaining and increasing the satisfaction of users of one's apparatus.

6. To daily consider the question of better methods for increasing the productiveness of one's territory.

Ordinary comprehension of a subject is often mistaken for the power to marshal one's forces and clearly explain the subject to another. Read a section explaining the characteristics of your apparatus and note the readiness with which you understand its meaning. After having done this, pick up your pen and try to reproduce, even in substance, all of what you have read and see how difficult or even impossible it is to do so. "If you want to know a subject, write a book about it." Every salesman should write out his sales talk upon each article of sale, and then revise it often enough to insure the introduction into it of the most logical arrangement of the subject and its most convincing presentation, selecting the very best language that he can command. He should then familiarize himself with his own production and cultivate the most impressive and effective delivery.

Personality and Power of Expression.

Personality is a tremendous factor in salesmanship and it can be cultivated and intensified. Success so often hinges upon this one feature, this question, not of knowledge solely, but of its refinement and skillful presentation, that it is strange that such utility is treated with indifference.

The art of expression is a rare accomplishment, but one that any person of education can develop to a high degree. No accomplishment counts for more in successful salesmanship than does the power of terse and lucid expression. While thought precedes expression, yet expression, by a peculiar phase of reverse action, clarifies and strengthens thought. To quote from Edgar A. Russell, the author of "Ethics and Principles of Salesmanship": "The deeper the knowledge, the broader the culture, the keener the reasoning faculties, the stronger will be the power of expression." "We may lay down the proposition that knowledge lacks potentiality unless it is accompanied by the power of expression."

In studying to develop expression we stimulate imagination, strengthen logic and attain greater confidence and poise, thus creating and assembling all those faculties, the combined exercise of which carries conviction.

The best self-training the writer ever secured was in writing circular letters, editing catalogues and writing out his best arguments setting forth the advantages of his company's products over competing products, and in preparing convention papers.

No matter how great your genius, high success means hard digging and everlasting digging. Strive to "do it better"—better than your competitor; better than your associates; better than your own past records, and your reasonable success is assured in advance.

Dallas Independent's Directory a Fine Book.

The Dallas Automatic Telephone Co., of Dallas, Texas, has issued its first real directory. Previous lists of subscribers, of which there have been a number, have not been dignified with the name "directory." The present publication certainly merits it.

The body of the book is printed on good firm white paper stock, in ten point type, easily readable, and with the subscribers' names and telephone numbers in black face. There follows a numerically arranged list on salmon tinted stock, and a classified business directory on a light yellow paper. The whole is bound in a stiff manila paper cover, printed in blue and red. It contains over 250 pages.

Here is a chance for YOU to economize

Red Seal Dry Batteries

are time and money savers. They last long and give the best of service while they last. They are economical cells. Test them at our expense —the guarantee protects you.

Write us for names of nearest jobbers, etc.

Manhattan Electrical Supply Co.

Chicago	New York	St. Louis
114 So. Fifth Ave.	17 Park Place	1106 Pine St.

Guarantee

We will *credit* account, *replace* batteries or *refund* amount paid for batteries including transportation charges if they do not prove satisfactory.

The Guarantee Protects You
The Battery's Quality Protects Us

Girl is holding No. 1 Model

Send for either outfit. Give it a trial by putting out an oily waste fire in a tin pan or pail, and convince yourself of its positive merit.

Address the nearest Liquid Branch

BUILT BY

The Liquid Carbonic Company

JACOB BAUR Pres. and Treas. CHICAGO New York Boston Pittsburg Cincinnati Milwaukee Minneapolis Atlanta St. Louis Kansas City Dallas San Francisco

Thunder and Lightning!

have no terrors for the exchange equipped with a set of DIAMOND Carbonic Fire Extinguishers.

The Diamond Carbonic—a fire department in a tank—can be depended upon to put out any incipient blaze INSTANTLY.

Fire can't live in the presence of carbonic gas (CO_2) because this gas suffocates the blaze by shutting off its air supply.

Carbonic gas (soda water gas) is heavier than air—displaces—and robs the fire of its oxygen supply.

The tank contains several pounds of liquefied carbonic gas—under great pressure. When you open the valve by turning the little wheel, the liquid expands into gas and rushes out through the nozzle with great force, penetrating the most inaccessible nook in which the fire may have started.

And it leaves no damage in its wake, as it is dry, invisible, odorless, harmless.

MADE IN TWO SIZES

No. 1, 20½ inches high, round bottom. Holds 4 lbs. of Liquid Carbonic Gas. Complete with hose and couplings, F. O. B. Liquid Branches $12.50

No. 2, 28 inches high, flat bottom. Holds 6 lbs. of Liquid Carbonic Gas. Complete with hose and couplings, F. O. B. Liquid Branches 15.00

Refills, at any of the Liquid Carbonic Co.'s branches:

No. 1, each..... .75

No. 2, each..... 1.00

Booklet free

No. 2

28 inches high. 6 lbs. of gas

From Factory and Salesroom

Automatic Telephone Equipment in Canada.

The Automatic Electric Co., of Chicago, is in receipt of an order for 1,500 automatic telephones to be furnished the Alberta Government in Canada, these telephones to be used in extensions to the exchange in the city of Calgary. This is the second large order for telephone equipment placed by the Alberta Government this year for extension to the Calgary exchange, in addition to orders for extensions to the automatic systems in Lethbridge and Strathcona.

The City of Edmonton, which operates the automatic telephone system, has also placed large orders for extensions during the current year. An order for a 500-line addition has been placed by the Saskatchewan Government for the Saskatoon exchange. This order was placed just prior to the closing of the contract for 3,000 lines of automatic equipment to be installed in the Regina exchange by the Saskatchewan Government.

The demand for telephone service has been so great in the cities mentioned, since the installation of automatic equipment, that the respective governments have hardly been able to keep pace with the requirements. Quite often before new installation of switching equipment has been completed, it has been found necessary to place orders for additional equipment.

Typographical Error in the Bissell Advertisement.

An unfortunate typographical error crept into the advertisement of The F. Bissell Co., of Toledo, Ohio, in last week's issue of TELEPHONY and was discovered too late for correction. The error which was made regarded the price of the No. 1 Security cable car, a price being given of $1.50. The correct price for this car without the table is $7.50 instead of the figure of $1.50.

Phoney Bill Playing the Host.

There's an industrial exposition scheduled for Rochester, N. Y., the home of the Stromberg-Carlson Telephone Manufacturing Co., and of Phoney Bill, the company's lively advance agent. Therefore, the blotter for September, which is now ready for distribution, shows Bill headed for the exposition hall, loaded with catalogs, circulars, badges, etc., and wearing

Headed for the Big Show.

the significant tag which entreats the stranger to "ask him." Bill allows that it will pay to go to Rochester and says: "Welcome to our city." The blotter, by the way, is always worth having. It's heavy stock; it absorbs ink; it has on it the calendar for the current month and for the one preceding and to come. If you don't regularly get these monthly reminders of Stromberg-Carlson and Phoney Bill, it will pay you to ask to be put on the mailing list.

A New Idea in Transmitter Repairs.

One of the largest Independent telephone operating companies recently found it necessary to replace all of its 14,000 transmitters. The cost of this change was reduced to a

The Ericcson Transmitter.

minimum by retaining the transmitter shells and inserting an Ericsson capsule and two retaining rings. These capsules were purchased from the Ericsson Manufacturing Co., of Buffalo, N. Y., and are the same as used in the company's regular capsule type transmitter.

Telephone companies that are having trouble with present transmitters would do well to investigate this and write the Ericsson company for prices and information.

Scarcity of Poles—Advanced Prices Predicted.

The Naugle Pole & Tie Co. of Chicago in a recent announcement urges the ordering of poles without delay. It states that it will be advisable to get in inquiries now as prices are higher than last year, and there is every prospect of an advance. Another matter of importance is the fact that the railways are advising all merchants along their lines to stock up early on account of the extraordinarily heavy movement of grain that is assured this fall. At the present time cars are plentiful, but the near future will probably bring a great shortage.

Paragraphs.

"COME IN WITHOUT KNOCKING, GO OUT THE SAME WAY" is the quotation on the September calendar blotter of the McRoy Clay Works, Chicago. The advice implied from the double meaning of the word knocking may be followed with good results.

THE ROME WIRE CO., of Rome, N. Y., maintains the high artistic standard of its monthly postcard calendars with the September card. These cards issued by this company appeal to all recipients as no doubt the prompt service given on orders appeals to those who have given the company an opportunity to furnish wire for telephone work.

C. W. MOODY of Cleveland, Ohio, recently severed his connection as district manager for the Chase Motor Truck Co. of Syracuse, N. Y. Royal B. Curtiss of Stepney, Conn., has been appointed in his place. Mr. Curtiss was formerly sales manager of the Royal Equipment Co. at Bridgeport, Conn. In his new position, he will have the oversight of a territory including Ohio, West Virginia, Kentucky, Michigan and part of Indiana. He will make his headquarters in Cleveland.

W. C. VAN SANT, who has represented the Chase Motor Truck Co. for several years past in the capacity of western traveling salesman, has lately been made district manager for the Pacific Coast. His headquarters will be in Los Angeles, Cal. Mr. Van Sant is one of the best known motor truck

LET YOUR NEXT PURCHASE

be

BROOKFIELD

INSULATORS

They have the QUALITY, the MECHANICAL STRENGTH and the ELECTRICAL EFFICIENCY that your insulators SHOULD have. It is real economy to use them on your High and Low voltage lines.

Brookfield Glass Co.

2 Rector Street New York

You will find our prices *very* attractive.

GET HEMINGRAY GLASS INSULATORS

For Best Transmission

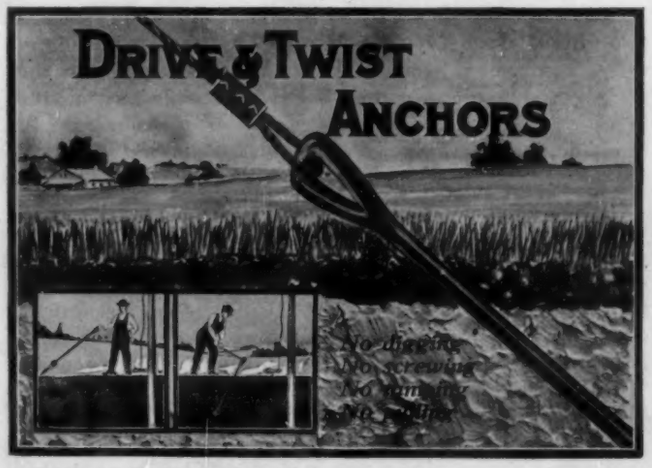
The teats on the petticoat, an exclusive feature of Hemingray Insulators, prevent water running to pins and causing grounds.

Hemingray Insulators are all insulation and are unusually free from breakage.

Write for Prices

Hemingray Glass Co.
Covington, Ky.

Factories: Muncie, Ind.



COFFEY HAS WHAT YOU NEED

WRITE HIM BEFORE YOU INSTALL A NEW SET OF BOOKS

SUITE 501-2, K. of P. BLDG.
INDIANAPOLIS, IND.

The SUPERIOR Solderless Ground Rod

THIS rod has a self-contained wire connector. Insert the ground wire and drive the key—that's all. Makes a *quicker* and *better* connection than the average soldered joint. Write for particulars.

For Sale by

Insulator Arrester Co.
Duluth, Minn.

Here's a Proposition
We will ship twelve anchors subject to your approval. We guarantee them to hold more and cost you less installed than any other anchor made. State if you want them for light, medium or heavy guy work.
THE VOTE-BERGER CO.
1848 W. Avenue
LaCrosse, Wisconsin

Maximum Holding Power
Minimum Cost Installed

ASK YOUR JOBBER

salesmen in the United States. For many years previous to the introduction of power wagons, he represented leading carriage and vehicle concerns and is familiar with trade conditions and needs in every section of the country.

C. K. THOMAS, formerly with the Lukenheimer Co. of Cincinnati and later with the Best Manufacturing Co. of Pittsburgh, Pa., two well known valve manufacturing concerns, is a recent addition to the staff of district managers of the Chase Motor Truck Co. Mr. Thomas in his new capacity will make his headquarters in St. Louis, Mo. He will have oversight of a territory including Kansas, Missouri, Texas, Arkansas and Oklahoma.

Local Advertising for Telephone Companies.

The one great drawback to the advertising of telephone companies in their local newspapers is the lack of proper copy. The extremely reasonable rates of most newspapers and the thoroughness with which they cover the field of prospective telephone subscribers, makes newspaper advertising an attractive proposition. The Stromberg-Carlson Telephone Manufacturing Company's book, "The Power of Advertising," shows the way to overcome this handicap by providing strong, catchy copy. This book contains many advertisements capable of eliciting inquiries from prospective subscribers, written by the members of the Stromberg-Carlson staff. The necessary cuts are furnished free by the Stromberg-Carlson company.

Although this profitable service is a recent innovation, many progressive companies have adopted it. Among these concerns are the following: Bryson Telephone Co., Bryson City, N. C.; Valley Telephone Co., Emlenton, Pa.; Local Telephone Co., Bellevue, Ohio; Union Telephone Co., McKinley, Texas; Blenheim-South Kent Telephone Co., Blenheim, Ontario, Canada; Disko & Laketon Telephone Co., Disko, Ind.; Mann County Mutual Telephone Co., Paola, Kansas.

The Union Telephone Co., at McKinney, Texas, says at the conclusion of a highly commendatory letter: "We were at a loss to know just how to make our advertising effective and we believe that you have solved the problem for us." As this book places the services of telephone advertising experts at the disposal of every telephone company, it is naturally in great demand. To insure getting a copy, requests should be made immediately of the Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.

Some Recent Monarch Orders.

The Monarch Telephone Mfg. Co., of Fort Dodge, Iowa, reports an exceptionally busy summer, especially in the switchboard department. A great many of the boards ordered and shipped during the past few weeks have been equipped with the Monarch special features, including the recall system, code signaling night bell, etc.

Among the orders handled recently are those covering switchboards for Seneca, Mo.; Castana, Iowa; Badger, Iowa; Warroad, Minn.; Killeen, Tex.; Doyle, Tenn.; Bonoparte, Iowa; Burgess, Ill.; Saltillo, Tex.; Nixon, Tex.; Strawberry Point, Iowa; Pisgah, Iowa, and Ionia, Mo.

In addition to those enumerated, orders for four switchboards to be shipped to the Province of Ontario, and two switchboards for shipment to the Province of Quebec, Canada, one board for Mexico and a tollboard for Windsor, Mo., have been received.

The Value of Courtesy.

Courtesy can neither be bought nor coerced, but must come spontaneously from those in charge of the company's affairs. The withholding of courtesy may apparently be ignored, but it is recognized and reacts to the detriment of those who are deficient in this respect. Self-interest, therefore, demands that courtesy be practiced, says a bulletin recently issued by the Illinois Central Railroad.

While affability, to some extent, is a talent, it is also, in some cases, genius. The one can be cultivated, but the other, if not natural, can be acquired only by great effort.

Lord Chesterfield has said: "Great talents, such as honor, virtue, learning, and parts, are above the generality of the world, who neither possess them themselves nor judge of them rightly in others; but all people are judges of the lesser talents, such as civility, affability, and an obliging, agreeable address and manner, because they feel the good effects of them, as making society easy and pleasing."

That courtesy is essential to those who desire advancement must be accepted as a fact. It is essential not only in the transaction of ordinary business, as between employes and officials, but as a stock in trade in dealing with the public—of value not only to the ambitious employe, but to the company. Without it, men with other talents and qualifications seemingly sufficient, have failed; with it, those lacking in many other ways have been successful.

A close study of the subject should be made through contact with those who are naturally affable; those who practice successful methods of salesmanship, and those whose actions in both official and social relations are governed by ordinary etiquette. A study of government methods, as applied in the army and navy, as well as in diplomatic relations with other countries, is well worth the effort.

Questions must be answered carefully and correctly, and with a cheerfulness that does not repel nor discourage the questioner. They may seem irrational, or even silly; it must be remembered, however, that the railroad, with its complex and changing rules and schedules, is, to a greater or less extent a mystery to some eighty millions of people—even the experts are put to their wits' ends to avoid mistakes or misunderstandings.

In "sizing up" some particular person for promotion, his disposition is one of the first things to be considered; in some departments it is the prime consideration—unless the man is a "mixer," no matter how well qualified he may be in other respects, he is "passed up" as undesirable. In other departments, civility may not be considered so essential.

Other things being equal, the employe who is uniformly civil and courteous in his dealings with the public and with his fellow employes, is very likely to be given preference. This is only natural and obtains in every business and in nearly every walk of life. It indicates a strength of character and a previous self-discipline that insures calm, judicial consideration of important matters in emergencies. "Losing one's head" is fatal to intelligent supervision. "Whom the gods would destroy they first make mad."

Every victory over discourtesy is well worth the effort and makes a man bigger and stronger and a more desirable employe. It brings him nearer promotion and raises him in the esteem of his family and his friends.

A Few "Boosts" from the Field.

Bernard W. Leavitt, of the City Telephone Co., of Southern Pines, N. C., sends in his renewal and adds: "TELEPHONY has been my right hand man for a long time and if there is ever anything I can do in addition to keeping our subscription paid up that will be of use to you, please command me."

"We are well pleased with the TELEPHONY and think it is just what every telephone company should have," writes the Centerville (Mo.) Telephone Co.

"I like your paper very much and could hardly get along without it," writes C. O. Bollum, of Sioux Falls, S. D.

"I have found your journal very instructive and interesting," writes William G. Yeo, of Los Angeles, California.

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Exceptional Facilities. Yards at the Most Favorable Shipping Points.

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Please tell the Advertiser you saw his Announcement in TELEPHONY.

Legal Cases and Decisions

By A. H. McMillan

Old and New Rights in Iowa.

I notice in a recent issue of TELELPHONY that a telephone company has no right to operate and maintain an exchange in a town in Iowa without having a license from the municipal authorities or franchise. Does that apply to a company that has been operating for a number of years, or just to new companies? Please advise me in your next issue, and if it applies to old companies operating without a franchise, please advise me the best course to pursue to get right.

The item you allude to reported the decision of the case of East Boyer Telephone Co. vs. town of Vail, 136 N. W. 120. This decision applies to new companies only.

In that case mention was made of the case of Farmers' Telephone Co. vs. town of Washta, 133 N. W. 361. In the latter case is found a history of the statutes of the state on the subject. By section 2158 of the code it provided as follows "Any person or firm or any corporation. . . . may construct a telegraph or telephone line along the public roads of the state, or across the rivers, or over any lands belonging to the state or any private individual and may erect the necessary fixtures therefor."

This provision had its origin in the code of 1851, Section 780, and was repeated in the revision of 1860 and code of 1873. Specific provision for corporate authority over the streets of cities and towns is of later origin. By Section 775 of the code of 1897, cities and towns are given the power "to authorize and regulate" telephone and other wires and to provide the manner in which and the places where the same may be erected on the public streets."

Section 776 of the code of 1897 provides that no franchise may be granted, renewed, or extended by any city or town for the use of its streets, highways, alleys or public places, unless a majority of the legal voters shall favor the action at any election held for that purpose. The case in question holds that under the statute as it existed in the code of 1851 and its subsequent re-enactment, prior to the enactment of the sections of the code of 1897, the builders of telephone lines could rightfully erect their poles, and string their wires on every street and alley in each and all of the cities and towns of the state, without regard to the wishes of the several municipalities. By the later enactments a license or franchise for the use of the streets, and the transaction of the telephone business is required from municipal authorities.

Any company which was in business previous to the enactment of the code of 1897 acquired vested rights to the use of the streets, and does not need a license or franchise from municipal authorities.

Interference with Farmers Line

We wish you would give us information on the following: The light and heating company, by the permission of the county commission built its lines on the public highway, a distance of ten miles.

Its wires are not insulated and carry a voltage of 6,600. It did not get any right of way from any of the farmers along the way, whose lines have been made extremely noisy thereby. Can the farmers get anything from the light company for the damage done?

We think the farmers are entitled to recover from the electric light company for the damage done their telephone lines. Between electric light companies and telephone companies the one first rightfully in position is entitled to protection against interference by induction on the part of the one subsequently erected.

For any damage caused by induction, the later established company is liable, and the company injured is also entitled to an injunction to restrain the electric company from stringing its wires in proximity of those of the telephone company. Nebraska Telephone Co. vs. York Gas & Electric Light Co., 27 Nebraska 284; 3 American Electrical cases 364; McMillan on Telephone Law 139.

Company's Liability to Brakeman Struck by Low Wire.

Whether a telephone company is liable for an injury to a railroad brakeman, struck while standing on a freight car, by a wire suspended by the company over the railway tracks, depends on whether the railway company authorized the wire to be so suspended. If the railway company did authorize it, the telephone company, if it constructed the line, had a right to assume the railway company would see that its trains were operated in reference to such wire and would use such precautions as might be necessary to protect its employes.

If the railway company, having authorized the placing of the wire across the track, failed to use such care as it should have used in the discharge of its duty to furnish the brakeman a safe place to work, the railway company would be liable for the injury suffered by the brakeman without fault on his part, resulting from the position of the wire. If the telephone company, without authority from the railway company, suspended the wire across the track, it should be held liable.

If the wire was not strung by the telephone company and not controlled by it, the telephone company would not be liable, though it was connected with the company's lines.

Such are the principles governing the liability of a telephone company for injury suffered by a railway employe from contact with a low hanging wire strung across the railway tracks, as laid down in the case of Southwestern Telegraph & Telephone Co. vs. Corbett, (Tex.), 48 Southwestern, 826.

Rule Requiring Rest During Test.

A lineman in the employ of an electric company knew its rule requiring all persons working on wires to quit work for ten minutes before 4 o'clock to ten minutes after 4 o'clock in the afternoon to allow the company time to test its wires.

Another rule of the company required that when workmen were engaged on any particular line, such line should be tagged at the switchboard and that during the time the tag remained in place the electric current was not to be turned on.

The lineman was injured during the time in which suspension of work was required and while the wire upon which it was claimed he was working was tagged.

It was contended against the company that the lineman before going to work received assurance that the wire on which he was to work would remain dead. It was not apparent, however, that this assurance was intended to supercede the rule requiring the suspension of work.

The lineman was held guilty of contributory negligence precluding his widow from recovery. McIsaac vs. Woonsocket Electric Machine & Power Co., 83 Atl. 754 (R. I.).

Regulation of Charges By City.

The city of Louisville, Ky., in 1909, passed an ordinance fixing telephone rates, after an attempt to deprive the Cumberland Telephone & Telegraph Co. of its franchise. The company attempted to have the enforcement of the ordinance enjoined on the ground that the rates established were confiscatory. The case was referred to a master who reported in favor of the city.

He was of opinion that, in the first year after the ordinance should go into effect, there would be a loss of $30,000, but that in another year or so, in view of the probable increase of subscribers, the company would get back its former net revenue with a probable continuous increase thereafter.

The judge disagreed with the master, making the earnings of the company 5-10-17 per cent. with a reduction to be caused by the ordinance of 3 6-17 per cent. The Supreme Court of the United States did not agree with the figures of the lower court but found that the question was too much in the air to jusify the continuance of the injunction without giving the ordinance a fair trial. City of Louisville vs. Cumberland Telephone & Telegraph Co., 32 Sup. Ct. Rep. 741.

Finding of Corporation Commission Sustained.

On complaint of B. C. Waddlington and Others vs. Lewis B. Hine, sole owner of the Purcell-Lexington Co., it was shown that the telephone company charged certain subscribers $1 per month for residence telephones and $2 per month for business telephones. Other subscribers were charged $1.25 per month for residence telephones and $2.50 per month for business telephones. The corporation commission of Oklahoma ordered that the company discontinue the charge of $1.25 for residences and $2.50 for business houses, and that all subscribers be charged at the same rate.

This decision was upheld by the supreme court of the state. Hine vs. Waddlington, 124 Pacific, 299.

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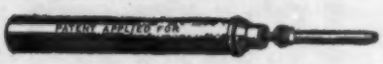

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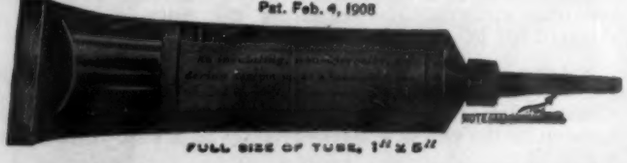

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Condensed News Reports

Officers of Companies are Earnestly Requested to Forward Us Promptly All Financial and Other Statements as Soon as Issued, and Any Items of Interest as to Their Plants and Systems

Personal.

BYRON E. COONEY, head of the publicity end of the Thaddeus Lane telephone properties, the Interstate Consolidated and its affiliated concerns, with headquarters in Spokane, Wash., felt his foot slip violently the other day. As a consequence he is elected to buy a big dinner—and presumably a good one. Here is the story as the Spokane Chronicle told it recently.

Byron E. Cooney.

"Which of the commandments is 'Thou shalt not steal?' That is, is it the seventh or eighth?

"Upon the answer depended the payment by Byron E. Cooney, advertising manager, or Charles B. Selby, treasurer, for a dinner at the Silver Grill to which all department heads of the Home Telephone Co. have been invited.

"The commandment was referred to as the seventh by J. C. Kelsey in an article for TELEPHONY, the leading telephone journal, of which he is the financial editor. Reproduced by Mr. Cooney in the Automatic Telephone News, a Spokane trade journal, the statement brought Mr. Cooney to the official carpet of President Lane.

"'Thou shalt not steal' was the eighth commandment, and the mistake was ludicrous, inasmuch as the seventh dealt not with Roosevelt's slogan, but with the social evil, declared President Lane.

"Mr. Lane was supported in his contention by Treasurer Charles S. Selby, who backed his support with an offer to provide a dinner if he was wrong.

"When Mr. Selby appeared with a Presbyterian prayer book showing the commandment to be No. 8, Mr. Cooney sent a hurry call to his friend, Father Kenaelly, at Gonzaga college. The father declared that 'Thou shalt not steal' was No. 7.

"Compromise was effected by the mutual choice of Dean Hicks to settle the controversy, Cooney calculating that the dean was a high churchman who would agree with the Jesuit fathers. But the dean said the commandment was the eighth."

At last accounts Cooney was trying to devise some way to make Kelsey "come across" with the price of the dinner.

FRANCIS I. DALY has been elected assistant secretary and assistant treasurer of the Bell Telephone Co. of Pennsylvania, and its associated companies. He succeeds the late W. C. Funk.

C. L. MILLER, of Janesville, Wis., manager of the local exchange of the Wisconsin Telephone Co., has been made district manager of the company's lines in Rock, Green, Iowa and Lafayette counties.

JOHN E. BOISSEAU, for two years district advertising manager of the New York Telephone Co., at Albany, N. Y., has been promoted to the position of manager of the sales, advertising and general publicity departments of the Chesapeake & Potomac Telephone Co., at Baltimore, Md. Mr. Boisseau joined the forces of the New York Telephone Co. in July, 1906, as a salesman and was transferred to Albany on June 8, 1910. He organized the company's publicity department in Albany.

STANLEY J. GODDARD, president of the Constantinople Telephone Co. (Société Anonyme Ottomane des Téléphones de Constantinople), and W. W. Cook, consulting engineer, left London by the Orient Express recently on a visit to Constantinople.

Obituary.

ARTHUR D. WHEELER, former president of the Chicago Telephone Co., Chicago, Ill., and member of the law firm of Holt, Wheeler & Sidley, died a few days ago, at his home in Lake Forest, Ill. Mr. Wheeler was fifty-one years old. The cause of his death was angina pectoris.

FREDERICK J. HEIZELMAN died recently at his home, after a lingering illness, at the age of fifty-four. He was closely identified with the telegraph and telephone service of Northwestern Ohio, and managed the construction of several lines outside of Toledo. For several years past he was superintendent of the Toledo Home Telephone Co.

New Companies.

NEWMARKET, ALA.—A new telephone company has been organized here, with L. P. Esslinger as president and general manager.

HOME, KANS.—Articles of incorporation have been filed by the Home City Telephone Co. with $10,000 capital stock. The incorporators are; D. H. Beavers, Home; Ed. B. Menzel, Marysville; John Hartman, Home; Gottfried Keller, Winifred; Chas. Noller, Home; and S. C. Harry.

CLAY CITY, KY.—The Clay City Citizens Telephone Co. has been organized here with a capital stock of $2,000. J. H. Henry is manager. A line will be built from Clay City to Stanton.

PRINCETON, MINN.—Articles of incorporation have been filed by the Baldwin-Blue Hill Telephone Co. George W. Jackson, Martin Mattson and others are interested.

VERNDALE, MINN.—The Verndale-Bartlett Telephone Co. has been incorporated with a capital of $650 by W. H. Ireland, Peter Lage, Adolph Rentz and others.

DAYTON, MONT.—A company has been organized to construct a telephone line from the lake shore to Camas, a distance of about forty miles.

CURTIS, NEB.—The North Star, Sheridan & Curtis Telephone Co. has been incorporated with $10,000 capital stock. The incorporators are: F. H. Hecht, R. A. Wilson, John Holm, F. M. Craemer, J. J. Heagney and W. J. Johnston.

WYMORE, NEB.—The Wymore Independent Telephone Co. has been organized by J. Neumann, M. J. Morgan, Dr. C. C. Gafford, F. E. Crawford and I. T. Cutshell. The capital stock is $25,000.

FISK, O.—Articles of incorporation have been filed by the Farmers Telephone Co. The incorporators are W. J. Harrington, R. P. Neel, John F. Jordan and others.

NEW WASHINGTON, O.—The Cranberry Mutual Telephone Co. has been incorporated by J. E. Wells and others.

OKLAHOMA CITY, OKLA.—A charter has been issued to the Davis Rural Telephone Co. The incorporators are Charles Hutchins, J. F. Ellis, and W. M. Baughman.

PEARL, OKLA.—The Pearl Valley Telephone Co. has been incorporated with $1,000 capital stock. The officers are: John S. Chambers, president, of Cedardale; Andrew F. Thompson, vice-president; Henry Thompson, treasurer, and George L. Wriston, secretary.

CHASELEY, N. D.—Articles of incorporation have been filed by the Chaseley Telephone Co., with a capital stock of $25,000, by N. E. Kellems, G. D. Harrington, G. F. Church and others.

ALLENTOWN, PA.—The Union Bell Telephone Co. has been organized and is building lines in the upper end of the county touching Neffs, Pleasant Center, Germansville, Newhards, New Tripoli and Bittner's Corner.

BUTLER, PA.—The Peoples' Telephone Co. has been incorporated by Albert C. Troutman, J. H. Grohmann, W. M. Purdum, A. L. Reiber, and T. M. Baker. A. L. Reiber was elected president and T. M. Baker, secretary. The capital stock is $500,000.

PALMERTON, PA.—The Palmerton Telephone Co. has been incorporated with $15,000 capital stock.

STONE CHURCH, PA.—Articles of incorporation have been filed by the Mount Bethel Telephone Co., with $10,000 capital stock. The incorporators are: Herbert Schoch, Wind

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Your orders will be shipped the day received.

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In 1910 The telephone and telegraph companies bought 3,870,694 poles, or 73.2 per cent of the total number bought. The steam railroads bought 7.9 per cent, and the electric light, power and railway interests 18.9 per cent. Over 21 per cent of the poles bought in 1910 were given some preservative treatment.

—From recent U. S. Official Statistics.

Every producer of poles and every seller of preservatives, as well as all those who market articles for pole line construction, should have their announcements in TELEPHONY. It is the cheapest and most effective means of covering the world's greatest market for such supplies.

Gap; E. S. Rosenberry, Mount Bethel; Joseph R. Ackerman, Wind Gap. J. A. Raesly has been elected treasurer.

GEDDES, S. D.—Articles of incorporation have been filed by the Midway Telephone Co. with $1,000 capital stock. The incorporators are John Garda, Joe Dagher, and Geo. Scherer.

SIMPSONVILLE, S. C.—A charter has been issued to the Home Telephone Co., of Simpsonville, with a capital stock of $2,000. The officers are M. D. Fowler, president; F. D. Hunter, vice-president; L. L. Richardson, secretary; and W. L. Fowler, treasurer.

EASTLAND, TENN.—The Eastland Telephone & Electric Co. has been incorporated, with $1,000 capital stock.

NEW MARKET, TENN.—L. P. Esslinger is president of a new telephone company which has been organized for the purpose of installing and operating a telephone exchange at this place.

ROLLING PRAIRIE, WIS.—The Butternut Telephone Co. has been organized with the following members: M. Gresch, M. Jackson, A. Guenthner, F. Guenthner, L. Guenthner.

WASHONGAL, WASH.—The Farmers Co-op. Telephone Association has been organized by R. A. Turk, I. Erin, C. K. Cochran, Thomas Jenny, M. G. Fritts and Fred Luthy.

Construction.

NORTH BLOOMFIELD, CAL.—The Forest Service will extend its telephone line from Nevada City to North Bloomfield, a distance of about eighteen miles.

PLACERVILLE, CAL.—Work will be commenced by the forest service to construct one of the most expensive telephone lines in the El Dorado national forest. This line will be along the long canyon divide and will be approximately twelve miles in length.

HARMON, ILL.—The Green River Telephone Co. will make some new extensions to its lines.

COLLY, KY.—The Colly Telephone Co. has been taken over by E. Franklin, who will extend the lines into Whitesburg.

BELLEVUE, NEB.—A new telephone line is under construction between Bellevue and Fort Crook.

FT. PLAIN, N. Y.—The Glen Telephone Co. will extend its lines from Dolgeville to Oppenheim.

WEBSTER, S. D.—The Webster Telephone Co. plans the rebuilding of its lines.

SAN ANTONIO, TEX.—The Eureka Telephone Co. plans to reorganize and incorporate with a capital stock of $300,000.

STONEGA, VA.—The Virginia & Tennessee Telephone Co. will extend its lines to Whitesburg and Eolia, Ky., a distance of about twenty-five miles.

ARLINGTON, WASH.—The Chamber of Commerce is promoting a farmers' telephone line from here to Darrington.

CATHLAMET, WASH.—The Granger Telephone Co. is making preparations to extend its line from Skamokawa to Grays River.

SPOKANE, WASH.—The Inland Telephone & Telegraph Co. has made application to the county commissioners for use of county roads for the construction and maintenance of a double trunk line, which is to be built from Spokane to Lewiston, Idaho.

Elections.

OZARK, ARK.—The Home Telephone Co. held its annual meeting recently and elected the following directors: J. F. Maxey, M. B. Conatser, L. L. Ford, W. Martin and W. C. Conatser. The directors elected M. B. Conatser, president, and W. C. Conatser, secretary and treasurer.

WAVERLY, ILL.—The Waverly Telephone Co. has held its annual meeting and elected the following officers: H. I. DeTurk, president; M. VanWinkle, vice-president; A. C. Moffett, treasurer; and A. W. Reagel, secretary.

EL RENO, OKLA.—The Canadian Valley Farmers Telephone Co. held its annual meeting and elected S. F. Smith treasurer. The other officers were re-elected.

Financial.

COLUMBUS, IND.—The Citizens' Telephone Co. has increased its capital stock from $50,000 to $100,000.

PARTRIDGE, KY.—The Upper Cumberland River Telephone Co. has increased its capital stock from $2,000 to $3,000 and will build local and long distance lines from Partridge to Benham and Harlan, Ky.

SALYERSVILLE, KY.—The Burning Fork Telephone Co. recently organized here by Louis Marshall, James Arnett, Oliver Patrick and others has increased its capital stock to $2,500 and will build long distance lines to Paintsville and Ashland, Ky.

WELCHBURG, KY.—The Welchburg-Tyner Telephone Co. has increased its capital stock from $1,000 to $2,500 and will build systems in Welchburg and Tyner. G. W. Rader, is manager.

WAGON MOUND, N. M.—The Ranchers Telephone Co. has filed a certificate of increase of capitalization from $3,000 to $10,000.

BUTLER, PA.—The Peoples Telephone Co., of Butler, has amended its charter and increased the capital stock from $50,000 to $180,000.

DELTA, PA.—The Delta Telephone Co. has filed an amendment to its charter permitting it to incur not over $50,000 indebtedness.

NEW BLOOMFIELD, PA.—The Perry County Telephone & Telegraph Co. has increased its capital stock from $17,000 to $20,000.

Franchises.

ROCHESTER, MINN.—A franchise has been granted to the Rochester Telephone Co. for fifteen years, and it is understood that the company will make many improvements to the system.

Underground.

BEAUMONT, TEX.—The Southwestern Telegraph & Telephone Co. will place its wires underground here. The work will cost approximately $7,000.

LOWVILLE, N. Y.—The Black River Telephone Co. is making arrangements to place its wires underground. Conduit approximately 1,040 feet in length will be built.

OROVILLE, CAL.—The Pacific Telephone & Telegraph Co. has excavations in progress for the placing of its wires underground.

MIDDLETOWN, DEL.—The State Telephone is placing its wires underground.

RUSHVILLE, ILL.—The Rushville Telephone Co. is preparing to build a two-story building and will then put its wires underground in the business section.

VINCENNES, IND.—Although the Pike County Telephone Co. was refused a franchise at the last meeting of the board of public works it has not abandoned its efforts to obtain the right to operate here. It is now the purpose of the company to bring mandatory action against the board, claiming that the board has established a monopoly contrary to the finding of the Supreme Court. The company may also again appear before the board with a second franchise naming rates still lower than those in the previous franchise, thus making the argument of reduced rates more forcible.

GLOVERSVILLE, N. Y.—The Glen Telephone Co. expects to be granted a franchise to lay conduits through the streets of this city.

Miscellaneous.

JONESBORO, ARK.—The Home Telephone Co. has filed notice of dissolution.

ST. MARIES, IDAHO.—St. Maries is to have a new telephone exchange costing $9,000. J. W. Fisher, manager of the Interstate Telephone Co., Ltd., has completed plans for the work.

ALBIA, IA.—E. C. Sloan has sold the Acme Telephone Co. to Walker & Dunn.

ELKHART, IND.—The Home Telephone Co. recently suffered a loss by an electrical storm.

MT. VERNON, IND.—The Posey County Home Telephone Co. has recently installed several thousand additional feet of cable, in order to take care of the increase of subscribers in the east end of the city.

VIDALIA, GA.—The Vidalia Telephone Co. has been sold to the Southern Bell Telephone & Telegraph Co.

COFFEYVILLE, KANS.—The Wann telephone system has been sold by P. S. Troutman to W. H. Small, of Michigan.

POPLAR, MONT.—A farmers telephone company will probably be established to extend the lines to Paxton and other points in that vicinity.

DEXTER, IA.—The Mutual Telephone Co. is making extensive improvements in its local system.

SPOKANE, WASH.—The Interstate Consolidated Telephone Co. will install a new exchange in St. Maries, Idaho.

THIEF RIVER FALLS, MINN.—The Tri-State Telephone & Telegraph Co. has made a proposition to the Commercial Club to install a new and modern central energy system.